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THE UNIVERSITY OF ALBERTA

PARENTAL STRESS, COPING, AND RESOURCES: IMPACT ON FUNCTIONING OF FAMILIES WITH MENTALLY HANDICAPPED PRESCHOOLERS

BY

JAN ELIZABETH REDDON

A THESIS

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled PARENTAL STRESS, COPING, AND RESOURCES: IMPACT ON FUNCTIONING OF FAMILIES WITH MENTALLY HANDICAPPED PRESCHOOLERS submitted by Jan Elizabeth Reddon in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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ABSTRACT

Increasingly, parents are being assisted to raise their handicapped children rather than turning to residential services. While some families function well in the face of demands inherent in raising a handicapped child, evidence indicates that many families are still experiencing considerable stress in coping with their children's special needs. To assist these families it is important to determine the characteristics of some families which allow them to raise their handicapped child without adverse effect on the wellbeing of individual family members or on the family system.

The T-Double ABCX Model of Family Adaptation would appear to provide a useful framework for guiding inquiry into the adaptive process of families raising handicapped children. This model integrates the individual, family, and social variables which simultaneously determine a family's ability to adapt under conditions of extraordinary stress.

The purpose of the empirical research was to examine four critical dimensions of the T-Double ABCX Model in relation to a fifth dimension which was the adaptive functioning of a sample of 16 families raising handicapped preschoolers. The five dimensions investigated were: Pile-up of Demands, Family Resources, Community Resources, Family Coping, and Family Adaptive Functioning. Each of these dimensions was assessed by means of a standardized self-report instrument completed by both mothers and fathers. There were four components to the subsequent analyses: descriptive statistics on the test data, comparison of test data with normative data, correlations among the measures, and development of regression models to predict family adaptation from the pile-up, resources, and coping dimensions. Overall, while the majority of families appeared to be adapting well, there were some who were not. Results of both the correlational and regression analyses indicated that stressor pile-up, resources, and coping efforts were associated with the families' adaptive capacity. In the regression analyses each of these dimensions accounted for a significant amount of the variance in the measure of adaptive functioning. Some interesting mother/father differences did emerge. It was concluded that the T-Double ABCX Model provides an excellent framework for guiding future research into the adaptive process of families raising handicapped children.

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TABLE OF CONTENTS

Page

RELEASE FORM i
TITLE PAGE ii
CERTIFICATE OF EXAMINATION iii
ABSTRACT iv
ACKNOWLEDGEMENTS vi
TABLE OF CONTENTS viii
LIST OF TABLES xii
LIST OF FIGURES xiv

CHAPTER I - OVERVIEW.............................. 1

1.1 Introduction 1

1.2 The Problem 3

1.3 Statement of Objectives 4

1.4 The General Design 6

1.5 Plan of the Dissertation 7

CHAPTER II - REVIEW OF LITERATURE 10

2.1 Introduction 10

2.2 Stressors and Stress in Families Caring for Children With Handicaps 11

2.3 Variables Potentially Affecting the Experience of Stress in Families Caring for Children With Handicaps 20

2.3.1 Child Variables 21

2.3.1.1 Gender, Birth Order, and Age 21

2.3.1.2 Nature of Handicapping Condition(s)/Special Need(s) 23

2.3.2 Family Demographic Variables 26

2.3.3 Parent Variables 29

2.3.3.1 Cognitive Variables 29

2.3.3.2 Personality Variables 33

2.3.3.3 Coping Strategies 35

Page

2.3.3.4 Social Resources 41

2.3.4 Sibling Variables 50

2.4 Summary 51

2.5 Need for Family System Approach 53

CHAPTER III - T-DOUBLE ABCX MODEL OF FAMILY ADJUSTMENT AND ADAPTATION 59

3.1 Introduction 59

3.2 The Family Adjustment Phase 60

3.2.1 Stressor/Transition Demands (Factor A) .. 63

3.2.2 Family Vulnerability: Pile-up and Family Life Cycle Stage (V Factor) 64

3.2.3 Family Type: Profile of Family Functioning (T Factor) 64

3.2.4 Resistance Resources: Capabilities and Strengths (B Factor) 65

3.2.5 Family Appraisal: Focus on Stressor (C Factor) 65

3.2.6 Family Management: Problem Solving and Coping (PSC Factor) 66

3.2.7 Family Adjustment, Maladjustment and Crisis: Demand for Change (X Factor) 67

3.3 The Family Adaptation Phase 69

3.3.1 Pile-up of Family Demands (AA Factor) ... 71

3.3.2 Family Strengths and Resources (BB Factor) and Community Resources and Supports (BBB Factor) 73

3.3.3 Family Typology (T Factor) 74

3.3.4 Family Appraisals (CC and CCC Factor) ... 75

3.3.5 Adaptive Coping (PSC Factor) 77

3.3.6 Adaptation (XX Factor) 78

3.4 Summary 79

Page

- CHAPTER IV - EXPERIMENTAL DESIGN 82
  - 4.1 Introduction 82
  - 4.2 Sample 83
  - 4.3 Procedure 85
  - 4.4 Instruments 86
    - 4.4.1 Bayley Scales of Infant Development 86
    - 4.4.2 The Life Experiences Survey 88
    - 4.4.3 The Parenting Stress Index 90
    - 4.4.4 Family Inventory of Resources for Management 93
    - 4.4.5 Social Support Inventory 94
    - 4.4.6 Coping Health Inventory for Parents 96
    - 4.4.7 Family Assessment Measure III 98
  - 4.5 Data Analysis 100
- CHAPTER V - RESULTS 104
  - 5.1 Introduction 104
  - 5.2 Sample Description 105
    - 5.2.1 The Parents 105
    - 5.2.2 The Children 107
  - 5.3 Summary Statistics on the Self-Report Measures 108
    - 5.3.1 The Parenting Stress Index (PSI) 109
    - 5.3.2 The Life Experiences Survey (LES) 116
    - 5.3.3 The Family Inventory of Resources for Management (FIRM) 119
    - 5.3.4 The Social Support Inventory (SSI) 123
    - 5.3.5 The Coping Health Inventory for Parents (CHIP) 128

Page

5.3.6 The Family Assessment Measure III (FAM III) 133

5.4 Integration and Overview of Summary Statistics on the Self-Report Measures 143

5.5 Correlations Among Self-Report and Demographic Variables 149

5.5.1 Mother Intercorrelational Trends 151

5.5.2 Father Intercorrelational Trends 165

5.5.3 Differences Between Mother and Father Correlations 180

5.5.4 Summary of the Correlational Results ... 189

5.6 Regression Analyses 190

5.6.1 Regression Analyses for Mothers 191

5.6.2 Regression Analyses for Fathers 197

5.6.3 Summary of the Regression Analyses 204

CHAPTER VI - DISCUSSION 208

6.1 Introduction 208

6.2 Summary and Implications of Results 208

6.3 Limitations of the Study 227

6.4 Directions for Future Research 230

REFERENCES 233

APPENDIX I - CORRELATIONS BETWEEN SUBSCALES FOR MOTHERS AND FATHERS AND STATISTICAL SIGNIFICANCE OF DIFFERENCE BETWEEN CORRELATIONS FOR MOTHERS AND FATHERS 251

LIST OF TABLES

Table Page

4.1 Measures Employed to Assess the Pile-up, Resources, Coping, and Adaptation Dimensions of the T-Double ABCX Model 91

5.1 Range, Mean, Standard Deviation, and Statistical Significance (p) of Scores for Mothers and Fathers on the Parenting Stress Index (PSI) 110

5.2 Range, Mean, Standard Deviation, and Statistical Significance (p) of Scores for Mothers and Fathers on the Life Experiences Survey (LES) 118

5.3 Range, Mean, and Standard Deviation of Scores on the Family Inventory of Resources for Management (FIRM) 121

5.4 Range, Mean, Standard Deviation, and Statistical Significance (p) of Scores for Mothers and Fathers on the Social Support Inventory (SSI) 125

5.5 Range, Mean, Standard Deviation, and Statistical Significance (p) of Scores for Mothers and Fathers on the Coping Health Inventory for Parents (CHIP) 130

5.6 Range, Mean, Standard Deviation, and Statistical Significance (p) of Scores for Mothers and Fathers on the Family Assessment Measure (FAM) III General Scale 135

5.7 Range, Mean, Standard Deviation, and Statistical Significance (p) of Scores for Mothers and Fathers on the Family Assessment Measure (FAM) III Dyadic Scale 136

5.8 Range, Mean, Standard Deviation, and Statistical Significance (p) of Scores for Mothers and Fathers on the Family Assessment Measure (FAM) III Self-Rating Scale 137

AI.1 Description of Abbreviations Used in Tables AI.2, AI.3, and AI.4 252

AI.2 Correlations Between Subscales in the Mother Sample 256

AI.3 Correlations Between Subscales in the Father Sample 268

Table Page

AI.4 Statistical Significance (2-tailed) of Difference Between the Mother and Father Sample Correlations 280

CHAPTER I

OVERVIEW

1.1 Introduction

There has been an increasing trend towards maintaining children having severe intellectual and/or physical handicaps within the family unit rather than placing them in institutional facilities. This move away from residential and institutional services for handicapped children to their maintenance within their own homes has had a significant impact upon the family which is just beginning to be understood. The growing availability of early intervention and other educational programs, as well as the use of parent support, advocacy, and training groups have all helped to sustain the capacity of affected parents to raise their handicapped child (Seltzer & Krauss, 1984). In spite of this, however, considerable evidence has been accumulating to suggest that many families are still experiencing significant levels of stress in coping with their child's special needs (Blacher, 1984; Crnic, Friedrich, & Greenberg, 1983; Friedrich & Friedrich, 1981).

In general, stress has been associated with individual adjustment problems (Seligman, 1978) and has been implicated as a significant contributor to family dysfunction and crisis experiences (Hill, 1949). Gallagher (1984) states "growing evidence of marital dissolution, child abuse and other negative indicators underlines the major task of service personnel in assisting families [of children with handicaps] to adapt without major negative impact on all family members" (p. xiv). According to Blacher (1984, p. 29) stress can be experienced regardless of the stage of adjustment of the family since it is associated in large part with the daily caretaking realities. The presence of a severely handicapped child requires increased parental attention to and involvement with the child's daily care needs. Although the type of involvement varies with the specific child's needs, it can be intensive. Self-help skills may be limited. Parents may be required to administer medication, physical therapy, and other treatment programs of a medical and/or educational nature. They may also have to deal with severe behavioral problems. This extraordinary involvement with the special needs of the child will naturally reduce the amount of time and energy available for other activities. In general, the handicapped child is assumed to affect in a negative way some or all of the following: the marital relationship, sibling relationships, relationships with friends and relatives, and planning daily activities or family vacations (Blacher, 1984, p. 29). In addition, parents often face increased financial responsibilities incurred by their child's needs for medication, equipment, and specialized treatments. Repeated medical crises affect many families. The search for appropriate educational programs, medical care, and parent respite care, as well as the necessity for frequent interaction with the various service providers involved, adds to the demands imposed by the special needs child (Friedrich & Shaffer, 1986).

1.2 The Problem

A large body of literature has amassed which documents the nature of the demands of raising a child with significant intellectual and/or physical handicaps and the toll that such persistent demands can potentially have upon family members. It has become evident to both clinicians and researchers, however, that some families appear to adapt surprisingly well without adverse effect on the well-being of individual family members or overall family functioning (Beavers, Hampson, Hulgus, & Beavers, 1986; Friedrich & Shaffer, 1986; Friedrich, Cohen, & Wilturner, 1987; Masters Glidden, Valliere, & Herbert, 1988). Many attempts have been made by researchers to identify variables which could account for the variability observed across families in response to raising a child with special needs. Variables such as the severity of the handicap, the socioeconomic status of the family, and the availability of social support to the family have been examined for their influence on the degree of stress experienced by parents. In general, results have been ambiguous and have failed to account for the range of positive and negative responses observed to parenting a child with handicaps. The majority of studies have been limited in scope, tending to focus on a specific family member and/or a specific variable. Rarely has the family as a system been considered when assessing the impact of the handicapped child. Furthermore, the orientation has been almost exclusively towards the negative consequences of raising a child with special needs. The personal and family strengths contributing to adaptation have received little attention (Kazak, 1987, 1989; Trute & Hauch, 1988a; Trute & Hauch, 1988b). What this body of literature does suggest, however, is that multiple variables associated with the individual family members, the family as a whole, and the external environment are involved in determining how a family with a child having disabilities will respond to the many challenges with which it is faced. It has become clear that the focus of the research must be broadened to include a multivariate model and must consider the family as a functional unit; having strengths as well as weaknesses. It is only through the consideration of the child within a family context that we can truly assess the needs of families, and design appropriate intervention programs which will assist all family members in their efforts to adapt to the demands of a child or sibling with handicaps.

1.3 Statement of Objectives

The first objective of the dissertation is to review the extensive literature which suggests that, despite the development of improved services for children having handicaps, many of their families are still experiencing considerable stress in caring for them. This body of literature illustrates the urgent need for further research if we wish to adequately assist parents in raising their children with handicaps in home settings.

The second objective is to review the literature which has attempted to isolate variables related to the family members' experience of stress, and to illustrate both the insight and the ambiguities which have emerged from this work. While this research has contributed significantly to our understanding of the demands of raising a child with special needs, it is evident that a more sophisticated approach to looking at the impact on the family of the child with handicaps is required.

The third objective is to address the need for a family system oriented approach to understanding families coping with the chronic demands of raising a child with handicaps, and to present the T-Double ABCX Model of Family Adjustment and Adaptation (McCubbin & McCubbin, 1987). This is a model of family functioning under conditions of both normative and extraordinary stress. It incorporates many of the key variables identified by researchers as being related to the family members experience of stress when caring for a child with special needs. Hence, the T-Double ABCX Model of Family Adjustment and Adaptation may provide a useful framework for examining the adaptive process in families with children having physical and/or intellectual handicaps.

The fourth objective is to describe an empirical research study which was undertaken to examine four critical dimensions of the T-Double ABCX model in relationship to the adaptive functioning of a sample of families raising preschoolers, having mental and, in some cases, physical handicaps.

The fifth objective of the dissertation is to provide an evaluation of the T-Double ABCX Model as a means of guiding further inquiry into the adaptive process of families raising children with moderate to severe handicaps.

1.4 The General Design

The predominant component of the research was directed towards the investigation of four of the key dimensions of the T-Double ABCX Model of Family Adaptation (i.e., Family Pile-up, Intrafamily Resources, Social Supports, and Coping), and the significance of these dimensions in predicting a fifth dimension (i.e., the level of adaptation) in families of preschool aged children with intellectual and, in some cases, physical handicaps. The dimensions of stressor pile-up, intrafamily resources, social supports, and parental coping were chosen because they most closely parallel the variables which have been identified thus far in the literature on families of children having handicaps. Furthermore, established instruments existed for these dimensions.

Sixteen two-parent families with developmentally delayed children between the ages of two and five were included in the analyses. Each child was formally assessed to establish his/her current developmental level and degree of physical and/or intellectual impairment. Both the fathers and mothers of the children participated in a structured interview to obtain information concerning family demographics and the child's medical history. The parents' degree of satisfaction with their child's early intervention and/or day care program, and their degree of satisfaction with other sources of personal and professional support were also ascertained within the context of the structured interview. In addition both parents completed instruments pertaining to: sources of stress in the parent-handicapped child relationship; other sources of stress in the family emerging as a result of major life events; the level of intrafamily resources and social supports available; the nature of parental coping behaviors and, finally the overall level of family functioning.

1.5 Plan of the Dissertation

Chapter II provides a review of the considerable research which has been undertaken to examine the experiences of families with children having intellectual and/or physical handicaps. The first section of the chapter reviews the literature which suggests that, despite the development of improved services for children with handicaps, many of their families are still experiencing considerable stress in caring for them. Subsequent sections of Chapter II are devoted to a review of research which has attempted to isolate specific variables associated with family members' experience of stress. These include: variables associated with the special needs of the child, family demographic variables, parent variables, and sibling variables. The contributions made by this research to our understanding of the demands involved in raising a child having physical and/or mental handicaps are highlighted, as are the contradictions and ambiguities which have emerged as a result of this work. The final section of the chapter addresses the need for a more sophisticated, family system oriented approach to the study of families having children with handicaps.

Chapter III describes the dimensions of the T-Double ABCX Model of Family Adjustment and Adaptation (McCubbin & McCubbin, 1987). This family system oriented model is presented as a potentially useful framework for examining the process by which families may function in the face of chronic demands inherent in raising a child with significant special needs.

Chapter IV outlines the methods and criteria for the selection of families participating in the study. The procedure for data collection and the instruments employed are also described. In addition, the methods of data analysis are presented.

The results from the investigation are presented in Chapter V. The sample of parents who participated in the study and their children are described. Summary statistics of the mother and father data on the self-report measures and results from the correlational analyses are described. Results of the orthogonal regression procedures employed to assess the contribution to overall family functioning of pile-up of stressors, intrafamily resources, social supports, and patterns of coping are outlined.

Chapter VI is a general discussion of the findings. Results are summarized and placed within the context of the literature and theory presented. The degree to which the findings from the correlational data and the regression analyses are consistent with the T-Double ABCX Model of Family Adaptation is discussed. Limitations of the study are described, and directions for future research are outlined.

CHAPTER II

REVIEW OF LITERATURE

2.1 Introduction

Since the seminal work of Farber in the late 1950's (cf. Farber, 1959) a vast body of literature has accumulated which attempts to describe the impact of a child with handicaps on the family. A multitude of studies documenting the demands and stressors facing the parents of these children have been published and have been the impetus for greatly improved services for handicapped children and their families. In spite of these improved services, however, it has become evident from the continuing research that, while some families appear to manage exceptionally well without obvious negative impact on individual family members or on overall family functioning, many others are still experiencing significant levels of stress in coping with the demands inherent in raising children with special needs (Blacher, 1984; Crnic et al., 1983; Friedrich & Friedrich, 1981). In an effort to account for this variability, considerable research has been directed towards identifying specific variables associated with family dysfunction and family members experience of stress. These have included variables associated with the child's handicapping condition, family demographic variables, and variables associated with the individual characteristics and behaviors of the parents and siblings.

In the following review of the literature the many demands facing parents of children with handicaps are outlined. Research suggesting that many parents are still experiencing considerable stress in meeting these demands is presented. Efforts by researchers to identify specific variables associated with family dysfunction and the experience of stress are described and the contradictory results which have emerged from much of this work are highlighted. Finally, the need for new directions in the research on the impact of the child with significant handicaps on the family system is emphasized.

2.2 Stressors and Stress in Families Caring for Children With Handicaps

Cummings, Bayley, and Rie (1966) found considerable psychological distress in mothers of mentally retarded children. In comparison with a matched sample of mothers having children with no special needs, these mothers demonstrated a significant degree of depression and anxiety, as well as lowered self-esteem with respect to their parenting role. In a similar study of the fathers of mentally retarded children, Cummings (1976) also found a high degree of psychological distress, including depression and anxiety, relative to fathers of a comparison sample of children having no special needs. In addition the fathers of the retarded children demonstrated a lower overall level of self-esteem and greater dissatisfaction with their family relationships.

Holroyd and McArthur (1976), employing the Questionnaire on Resources and Stress (Holroyd, 1974), found mothers of both Down syndrome and autistic children to be experiencing significant levels of stress, with mothers of autistic children reporting greater interference with normal personal and family functioning than mothers of Down syndrome children. As compared to mothers of Down children, mothers of autistic children were: "more upset and disappointed about the child; more aware or concerned about their child's dependency; more concerned about the effect of their child on the rest of the family, on family integration, etc.; called upon to handle more physical disability; aware of more personality or behavior problems in the child; more concerned about lack of available activities for keeping their child busy and; more concerned about future vocational handicaps" (p. 434). In most other respects the mothers of children having Down syndrome expressed as many concerns, including their own poor health and mood, excess time demands, financial problems, and lack of social support, as the mothers of autistic children.

In an often cited study, Bradshaw and Lawton (1978) employed the Malaise Health Inventory (Rutter, Tizard, & Whitmore, 1970) to assess stress in a large sample of mothers having severely handicapped children. The Malaise Health Inventory taps some of the emotional and physical/psychosomatic symptoms frequently associated with stress. While considerable variation in scores was present, the mean Malaise score obtained for Bradshaw and Lawton's sample of mothers with disabled children was more than twice the mean score for the general population, suggesting that, as a group, these mothers were reporting experiencing extraordinary stress.

In another frequently cited study Tavormina, Boll, Dunn, Luscomb, and Taylor (1981) examined the psychosocial effects on parents of raising a child with a chronic physical illness or hearing impairment. They found that both mothers and fathers scored significantly lower than established norms for parents of children with no special needs on measures of parental confidence and parental control. These fathers and mothers had less confidence in themselves as parents and tended to see themselves as having less control over their child's behavior. Fathers in the sample also tended towards less acceptance of the child. On a behavior problem checklist parents reported their children with special needs as having more behavior problems than their "normal counterparts", with parents of the hearing-impaired children reporting the most problems. Many special concerns were presented by all of the parents including: extra demands on their time and energy, tense home atmosphere, extraordinary pressure to do the "right thing" for their child, and having their lives center around the child. Finally, significant differences were found between the parents' perceptions of their current level of family functioning and their ideal mode of functioning.

Friedrich and Friedrich (1981) compared a sample of parents of mildly to moderately handicapped children with a control sample of parents of healthy children on the Questionnaire on Resources and Stress (Holroyd, 1974), as well as on a variety of other variables including marital satisfaction, social support, religiosity, and psychological well-being. Results strongly supported the hypotheses that families of handicapped children experience more stress, less marital satisfaction, decreased psychological health, and less social support. Friedrich and Friedrich concluded that, while parents of handicapped children experience more stress than parents of children with no special needs, they appear to have "fewer psychosocial assets to help them ameliorate the continual impact of the stress" (p. 553).

Breslau, Staruch, and Mortimer (1982) examined the impact of child disability on psychological distress in a sample of 369 mothers of children with cystic fibrosis, cerebral palsy, myelodysplasia, or multiple handicaps. They compared scores of mothers of disabled children with scores of a control sample of mothers of healthy children on two indices of psychological distress (i.e., a depression-anxiety scale and a measure of maternal distress). In comparison with control mothers, mothers with special needs children had a significantly higher mean score on the measure of depression-anxiety. As a group, they also demonstrated significantly more psychological distress associated specifically with their mothering role. These findings persisted when maternal education, family income, and racial composition were controlled for.

Leyendecker (1982) also outlined some of the potential psychological effects of mental handicap upon the family. He cited marital breakdown as a common result of the extraordinary stresses experienced by the families of mentally handicapped children, noting his own finding that in a sample of 521 families of mentally handicapped children in Germany, the rate of marital breakdown was more than twice the national average. He argued, however, that the birth of a handicapped child may, alternatively, draw the family closer together. While this would appear on the surface to be a very positive effect, Leyendecker suggested that parents in such families often admit that they are totally occupied by the handicapped child (i.e., they have no time for social contacts or for their own interests or activities). They, therefore, miss important contact besides family life. This, according to Leyendecker, is "bad for the family's 'mental hygiene' as all problems or conflicts take place in a very narrow field" (p. 533).

Leyendecker further indicated that parents often experience considerable role conflict if they are frequently required to spend significant amounts of time in direct training of their handicapped child. Failure of the parents to meet all of the demands of the training program, or failure of the child to progress at the rate expected by the parents may engender guilt and resentment. The spontaneous love and acceptance of the child which is an integral part of the parenting role may be compromised as the child becomes the object of "obliged" treatment. Siblings as well, according to Leyendecker, are likely to be influenced by similar ambivalence as they are faced with extra caretaking and family responsibilities.

Mardiros (1985) further examined the issue of role alterations, particularly as they affected mothers of handicapped children. She conducted ethnographic interviews of 50 mothers of moderately to profoundly handicapped children. These interviews revealed that the mothers rarely assumed responsibilities outside of child care. All of the mothers had been active in the work force prior to the birth of the child. Sixty-eight percent had originally planned to return to work after the birth but only 8 percent actually had returned to their jobs. The remainder found that the high cost of specialized child care, along with the excessive amount of time required to carry out routine daily activities and attend appointments resulting from the child's special needs, required full-time parenting. Furthermore, the precarious health status of many of the children required close supervision at home. Both fathers and mothers reported that their marital relationship had changed. As the mothers assumed more traditional responsibilities related to homemaking and child care, husbands were found to become more "traditional" and more removed from the family. Mothers often felt that they could not burden the fathers with the problems they experienced since the homemaking and child care tasks were their responsibility. In general, the mothers found their lives centered on the handicap and that this demanded sacrifices in terms of their own personal development.

Schilling, Schinke, and Kirkham (1985) also commented upon the potential for role strain in mothers with handicapped children. They too noted that parental and marital roles tended to be "traditional" in these families, with the mothers handling the majority of child care and homemaking tasks. "Requiring more support and assistance from their spouses, mothers of handicapped children may instead become increasingly distanced from husbands who take on diminished parental responsibilities" (p. 859). Furthermore, Schilling et al. argue that, "to the extent that primary caregivers obtain satisfaction and recognition as the child develops increasing competence and independence, these payoffs will be reduced for developmentally disabled children. Compared with other mothers, mothers of handicapped children will spend more time and receive less reinforcement for their efforts" (p. 859).

Kazak and Marvin (1984) compared stress reported by 50 parents of children with myelomeningocele with stress reported by a matched sample of control parents of nonhandicapped children. The measures of stress employed in this study included a symptom checklist, which was designed to identify persons at risk for stress related psychopathology; a measure of parenting stress; and a measure of marital satisfaction. When considered as a parental dyad, the parents of handicapped children experienced higher levels of stress, as measured by the symptom checklist, than did the parents of the nonhandicapped children. When considered as individuals, results revealed that the mothers of the handicapped children experienced the most stress followed by the fathers of the myelomeningocele children. The difference in reported stress between the fathers of the handicapped children and the parents of the nonhandicapped children, however, was nonsignificant suggesting that it was the mothers of the special needs children who were particularly susceptible to stress. Contrary to the results of other studies, there were no significant differences between the groups in total marital satisfaction for either mothers or fathers.

Rather than affecting the marital relationship, the stress in the sample of families with handicapped children appeared to be related to parenting issues. Significant differences in parenting stress were found between the mothers of myelomeningocele children and the control mothers, with the mothers of special needs children reporting more problems. These mothers perceived their children as being less adaptable, as being more demanding in terms of caretaking requirements, and less adequately meeting their mothers' expectations. In addition, the mothers experienced more depression around parenting issues and felt less competent as parents. They also reported having less time to themselves because of the needs of the child. For the fathers, on the other hand, there was no difference between the comparison groups in the overall amount of time spent looking after the child. In fact, the fathers of handicapped children actually spent significantly less time than control fathers caring for their children at bedtime. In a later publication Kazak (1987) compared parents of children with either myelomeningocele, severe mental handicap, or phenylketonuria, with three matched samples of parents of healthy children with respect to personal stress, marital satisfaction, and social support networks. As in the earlier study, it was the mothers of the disabled/ill children who appeared to be experiencing the most stress. No group differences were found between the target groups and the control groups in marital satisfaction. Kazak calls attention to the need for clarification of parental roles, including an understanding of how normative levels of marital satisfaction are maintained despite high levels of maternal stress.

The literature reviewed thus far is representative of a multitude of similar studies undertaken to assess the impact of the handicapped child upon the family. In general the studies have been very consistent in identifying a number of stressors with which families of special needs children are frequently confronted. It is also evident from the research reviewed that many families do experience considerable difficulty in dealing with these demands and that this is often reflected in the psychosocial adjustment of individual family members and in overall family functioning.

Despite these group findings, however, there was variability across families in their individual responses to the stressful circumstances of raising a special needs child. Families in general can be expected to range widely in terms of their adaptive functioning (Hansen & Hill, 1964). Families with a handicapped child are no exception and a proportion do manage surprisingly well despite being faced with an inordinate number of stressors (Beavers et al., 1986; Friedrich & Shaffer, 1986; Schilling, Gilchrist, & Schinke, 1984). It is in the attempt to identify variables which account for this range of reactions to parenting a handicapped child that the literature becomes somewhat ambiguous.

2.3 Variables Potentially Affecting the Experience of Stress in Families Caring for Children With Handicaps

A number of variables have been suggested in the above review and elsewhere, (see Kysela, McDonald, Reddon, &

Gobeil-Dwyer, 1988), as potentially affecting the family members experience of stress. These are variables associated with the handicapped child specifically (e.g., age, gender, birth order, and severity of handicap), characteristics of the parents themselves (e.g., personality, beliefs, attitudes, coping ability), characteristics of the siblings, family demographic variables, and characteristics of the family's social support network. These variables are discussed briefly next.

2.3.1 Child Variables

2.3.1.1 Gender, Birth Order, and Age

There exists relatively little data on the significance of the gender, age, and birth order of the handicapped child in determining family response. Since the pioneering work of Farber (1959, 1960) these have rarely been employed as independent variables. Farber (1959) found a mentally handicapped son to have a more adverse effect on the marital integration of the parents than a mentally handicapped daughter. He attributed this to the greater discrepancy between actual and ideal life careers of the sons. Bristol (1979) also found that autistic boys had a more adverse effect on family integration than autistic girls. She suggested that this may be related to the less social responsiveness; greater irritability, larger physical size, and more difficult caretaking that is characteristic of boys. Friedrich (1979), on the other hand, found that mothers of female handicapped children reported significantly more stress than mothers of male children having essentially equivalent handicapping conditions. Friedrich could offer no explanation for this finding. In a more recent study, Friedrich, Cohen, and Wilturner (1987) also found families having female children with handicaps to report more disruption in family functioning than families with male children. These authors, as well, could offer little in the way of an explanation for these findings.

Farber (1960) suggested that the birth order of the mentally handicapped child was significant in the implications that it had for sibling roles. Older siblings were often required to assume considerable responsibility for the care of their handicapped brother or sister and for the management of the household. Younger siblings, as they began to surpass their handicapped sibling developmentally, tended to take on the role of an older sibling, thereby altering normative role patterns and potentially creating adjustment problems in the siblings. Bristol (1979), however, found no association between family stress and the birth order of autistic children.

Farber (1959) further proposed that it generally becomes more difficult for parents to cope with their mentally handicapped children over the life cycle. He found that parents of older mentally handicapped children exhibited poorer marital integration than parents whose retarded children were younger. Bristol (1979) reported a similar finding in families with autistic children. Mothers of older children experienced more stress than mothers of younger autistic children. Stressors which are likely to become more significant as the handicapped child develops include: increasing discrepancies in age appropriate behavior, greater difficulties in the physical and behavioral management of the child, vocational concerns, and lack of living alternatives for young handicapped adults (Birenbaum, 1971; Bristol & Schopler, 1983; Farber, 1968, 1975; Suelzle & Keenan, 1981).

2.3.1.2 Nature of Handicapping Condition(s)/Special Need(s)

Common sense suggests that many aspects of a child's handicapping condition(s) and/or special need(s) should affect the family members' response to their situation. It stands to reason that a more severe handicapping condition would cause the family more difficulties than a less severe disorder or impairment (Blacher, Nihira, & Meyers, 1987). The child's diagnostic category has been associated with significant differences in family stress. Holroyd and McArthur (1976), for example, found that families with a child diagnosed as autistic experienced more stress than either families with a child having Down syndrome or families whose child was undergoing outpatient psychiatric evaluation.

Other writers (Breslau et al., 1982; Beckman, 1983; Chetwynd, 1985; McKinney & Peterson, 1987) have found that diagnostic classification of the disabled child to be less important in accounting for maternal stress than are other more specific characteristics. In the Breslau et al. (1982) study the diagnosis of either cystic fibrosis, cerebral palsy, myelodysplasia, or multiple physical handicaps was unrelated to mother's level of psychological distress. Rather, it was the child's degree of dependence on others in daily activities which was associated with maternal distress, regardless of diagnostic category. McKinney and Peterson (1987) also found no relationship between the diagnosis of cerebral palsy or Down syndrome and measures of parental stress response. Again, it was individual child characteristics such as degree of demandingness and distractibility which were associated with stress reaction measures.

Beckman (1983) examined the relationship between selected characteristics of a sample of infants having a variety of physical and mental handicaps and the amount of stress experienced by the infants' mothers. The mothers who reported more parent and family problems had babies who had a greater number of unusual caretaking demands, were less socially responsive, had more difficult temperaments, and displayed more repetitive behavioral patterns.

Chetwynd (1985) found stress in mothers to be associated with a number of behavioral and social problems of their handicapped children. Stress levels were highest among mothers whose children were a management problem, were abnormally active or underactive, were unable to occupy themselves for at least an hour, or were unable to play with other children.

Bristol (1979) restricted her view to one diagnostic category (childhood autism) and examined those child characteristics that might be related to parental stress. She found that characteristics such as difficult temperament, degree of dependency, and degree of physical incapacitation contributed significantly to the variance in the number of problems reported by the mother.

Blacher (1984, p. 22) summarized the characteristics of severely handicapped children which she felt were particularly salient in affecting the parental response. She suggested that limited mobility, lack of "normal" communication ability, possible unattractiveness due to deformity, severe physical disabilities, reduced cognitive competence, limited sensory awareness due to visual or hearing impairment, and lack of "cuddleability" due to hyper or hypotonicity all may alter parent responsiveness, attitudes, and competence in interacting with the child and, hence, have a substantial impact upon the family's level of stress. If, for example, a severely impaired infant lacked the sensory, motor, and/or cognitive skills to respond differentially to the parents and the parents, in turn, were unable to discriminate cues provided by the child and to respond to these cues appropriately, there would be significant disruption in the normal parent-infant interaction process. The lower level of parent-child reciprocity and the resultant reduced emotionality shared between the parents and the child may add to the difficulties of caring for the child's special needs. This could potentially have an adverse affect on the development of social attachment between parent and child. Such a situation would be expected to cause substantial anxiety and subsequent enduring stress for the parents.

There would appear to be little doubt that there are a number of characteristics associated with the handicapped child and his/her special needs that potentially affect the family members experience of stress. That these are not the only important variables in predicting individual and family adjustment, however, is suggested by the work of Bradshaw and Lawton (1978), and Friedrich (1979). In their study of mothers of children with severe handicapping conditions, Bradshaw and Lawton found no tendency for mothers of less mobile children, children with less communication, and children with less capacity to look after themselves, to report more symptoms of stress. As well, Friedrich found that type of disability was not a significant predictor of stress in mothers of children with a range of handicapping conditions. In fact, a significant negative relationship existed between the severity of the handicaps and total reported stress.

2.3.2 Family Demographic Variables

In addition to the variables associated with the child and his/her special needs, researchers have also examined a number of demographic characteristics of the parents and family which may affect the experience of stress. Demographic variables which have frequently been examined for their relationship to parental stress include socioeconomic status, parental age, and family size and composition.

It would be reasonable to expect that the family's socioeconomic status would be related to the parents' capacity to meet the demands of their child's special needs. Greater monetary and educational resources should facilitate the parents in locating and financing the special services required by their child, as well as in providing for the overall needs of the family. The work of Farber (1959) did find economic status to be a potentially important variable, with lower class families of mentally handicapped children often experiencing more stress associated with having fewer financial and material resources for meeting child and family needs. Middle and upper class families, however, experienced greater stress surrounding the inability of the handicapped child to meet parental aspirations for achievement. The work of Ferguson and Watt (1980) also indicated that social class was strongly related to maternal stress. These researchers found that social class accounted for considerably more of the variation in stress scores than did the severity of the child's handicap. Beckman (1983), Bradshaw and Lawton

(1978), and Friedrich (1979), however found socioeconomic status to be unrelated to stress in mothers of handicapped children.

Parental age and family size (i.e., number of children) have rarely been examined for their relationship to family stress. Based upon the evidence of Ragozin, Basham, Crnic, Greenberg, and Robsin (1982) that parental age was positively related to parental quality (after taking educational differences into account), Wilton and Renaut (1986) hypothesized that stress levels might differ in younger and older mothers of handicapped children. In their sample of mothers having disabled preschoolers, however, this hypothesis was not confirmed. There were no differences in stress reported by younger (less than 30 years) versus older mothers. The studies of Beckman (1983) and Friedrich (1979) also failed to find any relationship between parental age and stress, nor did they find any relationship between the number of children in the family and maternal stress. Bradshaw and Lawton (1978) also found no relationship between family size and stress with the exception that mothers with an only child who was handicapped experienced less stress than mothers whose handicapped child had one or more siblings.

Beckman concluded that the only demographic variable associated with the amount of maternal stress was the number of parents in the home, with single mothers experiencing greater stress. In keeping with the contradictory nature of the findings regarding demographic variables and stress in families with handicapped children, Bradshaw and Lawton (1978) did not find any significant difference in maternal stress between single and two parent families.

2.3.3 Parent Variables

2.3.3.1 Cognitive Variables

Response to any situation is mediated by the person's cognitive appraisal of that situation and its presumed consequences (cf. Lazarus & Folkman, 1984). "A cognitive appraisal reflects the unique and changing relationship taking place between a person with certain distinctive characteristics (values, commitments, styles of perceiving and thinking) and an environment whose characteristics must be predicted and interpreted" (Lazarus & Folkman, 1984, p. 24). A person's subjective experience, therefore, plays an important role in determining the impact of stressful events. Thus, there can be little doubt that the perceptions which parents of handicapped children have concerning themselves, their child, and their situation will strongly influence their efforts to cope with the challenges with which they are confronted. The work of Bradshaw and Lawton (1978), for example, provided some strong evidence for the importance of individual appraisal in mediating the stress experience. In their study of mothers of severely handicapped children, they found that levels of stress varied according to the mothers' satisfaction with their role of homemaker or worker. Mothers who were unable to work but wanted to reported significantly more stress than mothers who stayed home and did not want to work. In addition, mothers who felt that their social life was restricted because of the handicapped child reported more stress than the mothers who did not feel restricted, regardless of the actual amount they went out. Similarly, mothers who thought that their housing was unsuitable because of the child acknowledged more symptoms of stress than mothers who were satisfied with their housing, irrespective of the objective assessment of housing quality. Overall, Bradshaw and Lawton found variations in reported stress to be more related to the mothers' individual appraisals than to either the characteristics of the disabled child or the social and economic circumstances of the family.

To date, however, there has only been a modicum of research directed to the systematic examination of cognitive variables associated with parents of special needs children which may affect the appraisal process and subsequent coping efforts (Wright, Granger, & Sameroff, 1984). Some research efforts have been devoted to the examination of the causal attributions made by parents regarding their child's handicap and evidence exists that these beliefs may affect the parents' perception of the situation and their coping efforts. Affleck, Tennen, and Gershman (1985), for example, found that mothers who blamed others (e.g., physicians) for their infants' handicapping conditions perceived themselves as having less control over their child's future outcome, experienced greater mood disturbance, experienced greater caretaking problems, and demonstrated less responsiveness and involvement with their children than mothers who blamed their own behavior for their children's conditions, or mothers who assigned no causal attributions. Bristol and Schopler (1984), on the other hand, indicated that mothers of autistic children who attributed their children's handicap to their own inadequacy as parents or as a punishment for something someone in the family had done, reported fewer happy marriages, more depressive symptoms, and were rated as having made less successful adaptation to the handicapped child.

A body of work has also been undertaken to assess the attitudes of parents of handicapped children towards child-rearing (Cook, 1963; Dingman, Eyman, & Windle, 1963; Ricci, 1970). Until very recently, however, no efforts had been made to relate child-rearing attitudes to the parent's experience of stress. It is conceivable that parent child-rearing attitudes may mediate stress via the effect they have on parent expectations and behavior and, subsequently, on child behavior and development. That this relationship may exist is suggested by the work of Sameroff and Feil (1985). They argue that "beliefs concerning particular child-rearing practices and attitudes regarding ideal developmental outcomes emanate from a conception of the developmental process itself" (p. 85). They believe that in order to truly understand how parental child-rearing attitudes may effect parental response and, in turn, child behavior and parental stress, it is necessary to assess the underlying theories parents hold concerning development. Sameroff and Feil have, thus, proposed a model to assess parental conceptualizations of child development and have found that with an increasingly sophisticated, multivariate view of development, parents were more able to deal with the problems presented by a special needs child. Furthermore, Wright et al. (1984) have suggested that this variable, parental concepts of development, may interact with parental response to the educational programs offered their children. These writers suggested that a lack of sophisticated understanding of child development can be associated with increased stress if parents are confronted with professionals espousing differing (i.e., more sophisticated) beliefs.

The potential importance of religious beliefs in coping with a handicapped child has also been suggested (Bristol & Schopler, 1984). Farber (1959), for example, found that Catholics tended to be more accepting than non-Catholics of a retarded child. Lazarus and Folkman (1984) argue that existential beliefs, such as a belief in God, can have a significant effect on the appraisal process in that they "enable people to create meaning out of life, even out of damaging experiences, and to maintain hope" (p. 77).

It is clear that researchers have only begun to tap aspects of parental cognition such as attitudes, beliefs, values, and commitments which may be important in determining their coping efforts and experience of stress.

2.3.3.2 Personality Variables

Evidence has emerged from the general literature on the stress-illness relationship that some personality variables may also have a bearing on the appraisal process and subsequent coping efforts (Garrity & Marx, 1985). Lazarus (1966, 1985) discussed such characteristics as affiliation, approval motives, self esteem, conformity, and defensiveness as they may relate to the way in which individuals appraise and cope with their environment. Generalized beliefs about personal control have also been assumed to affect response to stressful situations (Johnson & Sarason, 1978). Individuals who have a general disposition to view events as being under their control may be expected to engage in more active coping efforts than individuals who see themselves as having little personal control.

In general, there has been little helpful research effort directed towards the influence of personality variables on the coping efforts of parents of handicapped children. Recent work by Abbott and Meredith (1986) did reveal some interesting findings. There was no difference between the overall personality profiles of parents with handicapped children and a control group of parents whose children did not have special needs. A within group comparison, however, revealed that parents of handicapped children with a high score on a measure of family strength had personality profiles indicating higher nurturant, affiliative, and intraceptive needs. The authors suggest that this pattern may "imply a greater concern for being with others, understanding others and helping others, which are characteristics relevant to the care of a disabled family member" (p. 374). McKinney and Peterson (1987) examined beliefs about personal control in mothers having children with either Down syndrome or cerebral palsy. As predicted, they found high scores on a measure of perceived control to be associated with significantly higher scores on maternal ratings of their own competence in meeting their child's special needs. The relationship of perceived control to maternal depression, however, was not significant although scores were in the expected direction with low scores on perceived control being associated with a greater degree of maternal depression. A potentially more interesting result emerging from this work was the interaction found between spousal support and mothers' degree of perceived control. Mothers with an internal locus of control and less spouse support obtained significantly higher scores on all stress response measures employed illustrating the complexity of the stressor-stress relationship.

Furthermore, while stable personality traits may act as moderator variables in both the appraisal and coping processes, Lazarus and Folkman (1984, p. 66) caution that we must distinguish between stable dispositions and contextualized judgment or appraisal of a specific situation. Individuals' general beliefs about personal control, for example, may not necessarily predict their control appraisals in a particular encounter because of the influence of other stressor-specific and context-specific variables.

2.3.3.3 Coping Strategies

Lazarus and Folkman (1984) view coping as a process and define it as "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taking or exceeding the resources of the person" (p. 141). Hence, in addition to being influenced by the individual's appraisal of the situation, coping efforts are influenced by the individual's utilitarian (i.e., financial, material), social, and psychological resources. Social resources are represented in the interpersonal networks of which the individual is part and which are a potential source of support. These are discussed in more detail in a later section. Psychological resources are the personal characteristics that people draw upon to help them withstand the stressors with which they are faced.

Personality variables such as self-esteem and a general sense of mastery can function as personal resources which have potentially powerful effects on the coping response (Pearlin & Schooler, 1978). Lazarus and Folkman (1984, p. 157) also include positive beliefs, social skills, problem solving ability, and psychological and physical health as important psychological resources.

Pearlin and Schooler (1978) suggest three general classes of coping responses. These are : "(1) responses that change the situation out of which the strainful [stressful] experience [stressor] arises; (2) responses that control the meaning of the strainful experience after it occurs but before the emergence of stress; and (3) responses that function more for the control of stress itself after it has emerged" (p. 6).

Responses that serve to change strain [stressor] producing situations serve as the most direct coping strategies since they are aimed at altering or eliminating the source of the stressors. In order to change the situation, however, the individual must recognize it as the source of the problem and must have the knowledge and experience necessary to eliminate or change it. Furthermore, in some cases changing the situation is not the ideal solution as it may create another unwanted situation. Finally, some of the most persistent stressors originate in situations which are impossible to change (Pearlin & Schooler, 1978).

When coping efforts are not successful in eliminating the situation, its stressful impact may be lessened by responses which function to alter the appraisal of the problem so as to cognitively reduce its threat. Individuals may cope with a potentially stressful situation, for example, by comparing it favorably with hardships experienced by others. Thus, by viewing problems as less severe or no more severe than those of others, the significance of the threat may be attenuated (Pearlin & Schooler, 1978).

Pearlin and Schooler also describe "selective ignoring" as another perceptual strategy that serves to control meaning. In general, this involves identifying and focusing on the positive or rewarding aspects of a situation and ignoring or trivalizing the negative aspects (Pearlin & Schooler, 1978).

The third type of coping does not alter the stressful situation nor does it alter the meaning imposed upon the situation. Rather, it functions primarily for the management of the resultant stress. According to Pearlin and Schooler, such coping strategies are attempts made by individuals to accommodate to existing stress without becoming overwhelmed by it. Sentiments such as "accept hardship because it is meant to be", "relax and difficulties become less important", "try not to worry as time itself solves problems" illustrate such coping efforts (Pearlin & Schooler, 1978).

Lazarus and Folkman (1984, p. 185) suggest that no coping strategies are inherently good or inherently bad but must be evaluated in light of their appropriateness to the internal and/or external demands of the particular situation. Passive acceptance may, for example, be adaptive in a situation which cannot be altered but highly maladaptive in a situation which can and should be changed.

The coping resources and behaviors of parents of special needs children have only recently come under scrutiny. An increasing number of writers have identified the need for a shift away from viewing parents of handicapped children solely in terms of their stresses and weaknesses towards an examination of their competencies and strengths (Abbott & Meredith, 1986; Byrne & Cunningham, 1985; Crnic et al., 1983; Friedrich, Wilturner, & Cohen, 1985; McCubbin et al., 1982; Schilling et al., 1984; Schilling & Schinke, 1984; Schilling et al., 1985). Despite this, however, the empirical work which has addressed itself to this task has just begun.

Friedrich et al. (1985) looked at four dimensions of coping resources in relationship to the scores of mothers of mentally retarded children on the first factor of the Questionnaire on Resources and Stress - Friedrich, Parent and Family Problems (QRS F, Friedrich, Greenberg, & Crnic, 1983). The coping resources examined included utilitarian resources (i.e., socioeconomic status), health/energy (i.e., maternal age, depression and psychological well being), general and specific beliefs (i.e., locus of control and religiosity) and social support (i.e., marital and other family support). All of the dimensions, with the exception of the utilitarian resources, accounted for a significant proportion of the variance of the QRS - F scores. Friedrich and his associates hypothesized that the failure of the utilitarian resources dimension to be related to maternal QRS - F scores could be explained by the overall high socioeconomic status of the sample.

Abbott and Meredith (1986) examined the coping behaviors of parents of mentally retarded children. A significant proportion of the parents (71 percent) reported that they coped by maintaining a positive outlook and by accepting the handicapped child and the child's limitations. Thirty-nine percent reported that they coped by taking one day at a time, and carrying on as normal a routine as possible. Another 20 percent coped by developing a commitment to help the child achieve his/her maximum potential. Approximately 88 percent of the sample attempted to cope by developing family strengths such as family pride, trust, loyalty and competency in solving problems. Finally, 41 percent coped by attempting to enhance their personal resources such as patience, compassion, and unselfishness.

McCubbin et al. (1982) examined the coping strategies of parents having children with cerebral palsy. Mothers tended to cope by keeping the family together and stable, by placing a high priority on carrying out treatments for their children in the home setting, and by enhancing their own personal resources through developing more self-reliance and independence and by caring for their own health. Mothers also found talking to friends and other parents about their feelings to be a useful coping strategy. Fathers tended to cope by investing time and energy on the job, by attempting to maintain family stability, and by investing in themselves as individuals. Fathers also valued sharing personal feelings and concerns with their wives and going out with them on a regular basis. Fathers were also committed to ensuring that their children's treatments were carried out at home.

In an examination of parents having children with cystic fibrosis, Venters (1983) found a variety of coping strategies being employed. Endowing the illness with meaning compatible with an already existing philosophy (e.g., religious) was one coping strategy frequently used. Some parents favorably contrasted their situation with that of other families having ill or handicapped children. Other parents reported that they coped by living from day to day rather than looking towards the future. Emphasizing the children's assets as opposed to their disabilities was another frequently used coping strategy.

It is evident that the study and evaluation of parental appraisal and coping processes is vital to our understanding of the way in which families function in the face of the significant challenges inherent in the task of raising a handicapped child.

2.3.3.4 Social Resources

The importance of social resources in influencing the coping process was noted earlier in the discussion of parental coping efforts. Social support, however, is a complex variable and has been operationalized in a variety of ways including: the existence or quantity of social relationships in general, or of a specific type such as marriage or organizational membership; the content of resources provided (e.g., money, information); the function or role of support (e.g., provision of emotional concern, instrumental aid); and the structure of an individual's network of social relationships. Although rarely examined simultaneously, House and Kahn (1985) suggest that each of these aspects (i.e., quantity, functional content, and structure) are interrelated and should be considered to be part of the general domain of social support. Social relationships must be present in some quantity, for example, before they can have structure and supportive function or content. The interactional and structural dimensions of the network, on the other hand, will influence the functional content (House & Kahn, 1985).

Most commonly, it has been the existence or quantity of social relationships which have been employed as an index of "social support". According to House and Kahn (1985) information related to marriage, organizational membership, frequency of contact with friends and relatives, for example, is reasonably objective, reliable, and easy to obtain, and there is considerable evidence relating the existence and quantity of social relationships to health and psychological well-being. To what extent the quality and function of these relationships are the important variables, however, as opposed to the simple quantity has yet to be clarified in the literature (House & Kahn, 1985). Barrera (1981), for example, states "knowledge of people's subjective appraisals of the adequacy of support is more critical to the prediction of their well-being than simply collecting information about the number of supporters or the quantity of supportive behaviors to which they have access" (p. 85).

In his pioneering work Cobb (1976) conceived of social support as providing individuals with the knowledge that they are loved, cared for and esteemed, and that they belong to a network of communication and mutual obligation. More recently, according to Wood (1984), functional definitions of social support have included two distinct categories: tangible or instrumental support (e.g., provision of money, goods, babysitting services) and psychological or affective support (e.g., provision of emotional concern, esteem communication). Hirsch (1980) added categories related to the provision of information or advice, the provision of feedback regarding actions (i.e., "social reinforcement"), and "socializing" (e.g., attending a movie with a friend) as functions of the social support network. Barrera and Ainlay (1983) have suggested similar functional categories (i.e., material aid, behavioral assistance, intimate interaction, guidance, feedback, and positive social interaction). It has become increasingly recognized by researchers that the functional aspects of support are complex and often hard to identify. The effectiveness of any particular type of support will depend to some degree on the characteristics of the individual receiving the support, the source of the support, the type of problem, and the stage within a given problem (Jacobson, 1986; Wood, 1984).

A third, but less common, approach to the study of social support has been through network analysis. In undertaking a network analysis the target individual acts as the focal point. The focal individual's social contacts and the relationship of these contacts with the focal individual and with each other comprise the network. Within the social network a number of structural and interactional dimensions can be examined. Network size is the number of social contacts identified. Density indicates the extent to which all members of the network are linked with each other. Dispersion represents the physical proximity of network members to the focal individual. Multiplexity refers to the extent which relationships involve more than one type of content or function. Other network characteristics which can be examined include: the degree of supportive reciprocity within the relationships; the durability of the relationships; the intensity of emotional closeness involved; the frequency of interactions; the homogeneity or degree of congruence among the network members on some given dimension (e.g., specific values, experiences, attitudes); and the presence of conflict or negative influences in the networks (Wood, 1984). Network analysis has the potential to reveal properties of the support system which would not otherwise be apparent and which may have a significant effect on the type of support available to the focal individual in a given situation. Dense networks, for example, tend to be associated with greater availability of emotional support but greater potential for conflict. They also often operate to maintain the status quo and inhibit change by network members. In cases where change is desirable, a dense network could become a liability (Wood, 1984).

It is evident from the above discussion that the measurement of social support is a difficult task and that the simultaneous assessment of the numerous dimensions inherent in the concept is often not possible within the context of a single study. House and Kahn (1985) suggest that, in most cases, it is useful to distinguish among different sources of support and among types of support. The sources and types which are important will depend upon the nature of the problem. They also suggest that the availability and quality of support are key variables.

That the existence of adequate social support is a major factor in determining the capacity of parents to cope with their handicapped child has been suggested repeatedly in the literature (e.g., Dunst, Trivette, & Cross, 1986; German & Maisto, 1982; Schilling et al., 1984). Overall, however, the supportive process for families of a handicapped child are poorly understood. In part, this has been due to the complex nature of the social support concept and the measurement difficulties that this poses. In one of the most extensive studies to date, Dunst et al. (1986) found evidence of both direct and indirect influences of social support on parent, family, and handicapped child functioning. More supportive social networks, as measured by the number of sources of support and satisfaction with support, were associated generally with better personal well-being, more positive attitudes toward the child, more positive influences on child behavior and development, and more positive influences on parent-child interactions. The exact causal or mediational relationships, however, were not clearly revealed and the authors suggested that it is only through the identification of what types and dimensions of support have what impacts, can an understanding of the differential effects of social support be obtained. In other words, who provides what for which problem is an important question we have barely begun to answer.

According to Unger and Powell (1980) "kin, friends, and neighbors provide unique resources to a family under stress, varying, for example, in the degree of intimate contact and type of help provided" (p. 568). One of the most consistent findings in families of handicapped children has been the importance of a supportive spouse or partner. Friedrich (1979) found that the most significant variable associated with reduced stress in families of handicapped children was the mother feeling secure and satisfied in the marital relationship. Nihira, Meyers, and Mink (1980) found that the degree of marital satisfaction was a key variable in determining the family's susceptibility to dysfunction in the face of demands imposed by a retarded child. Marital satisfaction was also found to be closely linked with the handicapped child being kept in the home versus being placed in an institution (German & Maisto, 1982).

Waisbren (1980) found that extended family members, particularly grandparents, were an important source of support for parents of children with special needs. In addition, however, she provided evidence that the presence of greater degrees of extended family involvement can be stressful as well as helpful indicating that both the costs and benefits of the support networks need to be evaluated.

Kazak and Marvin (1984) found that the size of the friendship network was significantly smaller in families with a disabled child than in comparison families, indicating that this source of support may not be readily available or easily utilized by families with special needs children. In addition, the networks of these families tended to be more closely knit and those of mothers and fathers overlapped more than in the control group. This network density was found to be associated with higher levels of stress for both parents. Kazak and Marvin concluded that while dense networks can produce a feeling of cohesiveness and support, they may also create stress since there is less access to other resources and fewer opportunities to discuss network related stress.

One difference between families with and without a handicapped member is that the former generally have a great deal of involvement with formal sources of support (Kazak & Marvin, 1984). There is nonetheless a dearth of research focused on evaluating the effectiveness of these networks in providing resources which fit the needs of individual families. Waisbren (1980) found that the mere existence of formal services did not necessarily lessen the stress experienced by parents of very young handicapped children. She attributed this to a number of possible factors. The parents may have been unaware that the services were available, the services provided may not have been appropriate for the parents' needs, or the parents may have been too embarrassed to seek out services which may have aided them.

In general, formal supports have rarely been evaluated from the viewpoint of the entire family. Priorities for services have primarily centered around the requirements of the handicapped child and have not considered the net gains and losses to the family. Featherstone (1980, p. 177) and Lipsky (1985) both eloquently describe some of the problems that parents may encounter in their dealings with educators and other service providers. They emphasize that the support network has the potential to increase parental stress if it provides feedback which serves to raise conflicts or question parental practices.

The assumption is often made, for example, that early intervention programs serve to reduce the level of stress in families of young children with handicaps by providing an external support system. It has been suggested, however, that involvement in early intervention programs could potentially increase the overall level of stress in the family because of the demands which are made on the parents (Benson & Turnbull, 1986). Current thinking in the area of early intervention emphasizes the importance of parent involvement (Bricker, 1986). Parents may fulfill a variety of roles in programs including that of teacher, advisor, and therapist. In spite of the inherent logic of involving parents in the education of their young children, a high level of parental involvement may result in the investment of a disproportionate amount of energy with one family member, thereby making it more difficult to meet personal needs and the needs of other family members. Parent involvement would vary with the demands made by the program and it could be anticipated that stress would result if there was a mismatch between the degree of involvement desired by the family and the degree of involvement demanded by the program.

Disagreement on the part of parents with aspects of program philosophy (e.g., degree of structure, commitment to integration); lack of confidence in the competency of program staff; or failure of parents and staff to share similar attitudes, values, or theoretical orientations are other potential sources of conflict which could result in increased stress for the family. Parents and staff who could not agree on long-term objectives or short-term goals would have difficulty establishing a comfortable working relationship (see Kysela et al., 1988 for a more detailed review of these issues).

Overall, families with a handicapped child will vary in terms of the type and level of support that is optimum. Specific sources of support will be differentially appropriate not only for different families but also at different stages within an individual family's developmental history. The utilization of personal and professional networks is not static but varies over the handicapped person's life cycle (Suelzle & Keenan, 1981). Therefore, the needs of a family with a young handicapped child will be different than those of a family with an older child. Likewise, mothers, as the primary caregivers, also will exhibit needs different from the fathers and siblings (Beckman-Bell, 1981). A good match between the support offered by the support network and the needs of the individual family members should result in a family that is stronger and able to function more effectively in the face of pervasive demands (Tracy & Whittaker, 1987).

2.3.4 Sibling Variables

To date there has been very little effort directed towards the examination of sibling variables and the way these may affect the family members experience of stress. If the siblings themselves were having difficulty in adjusting to the demands of their disabled brother or sister, this could potentially result in increased stress for themselves and other family members.

A limited body of literature has been devoted to the impact of the special needs child on the siblings (Farber, 1959, 1960; Gath, 1972, 1973; Graliker, Fishler, & Koch, 1962; Lobato, Barbour, Hall, & Miller, 1987; Seligman, 1983; Skrtic, Summers, Brotherson, & Turnbull, 1984). Some studies have found increased behavioral and/or psychological problems in siblings of handicapped children (Farber, 1959, 1960; Gath, 1973) whereas others have found little evidence of negative impact (Gath, 1972; Graliker et al., 1962; Labato et al., 1987). Seligman (1983) summarized some of the potential sources of psychological distress in siblings. Siblings may experience guilt and resentment as they are burdened with excessive responsibilities and high parental expectations. They may also resent the

2.4 Summary

It is apparent from the above review that parenting a special needs child is a source of numerous persistent stressors. An array of variables related to the handicapped child, the parents, the siblings, and the social network were outlined as potentially affecting family members experience of stress and their capacity to cope with the demands with which they are confronted. The influence of the handicapped child's age, gender, birth order, and special needs was discussed. It was noted that specific characteristics such as physical incapacitation, communication deficits, reduced cognitive competence, behavior problems, or difficult temperament were likely to be more significant in predicting parental stress than was any particular diagnostic category. The potential influence of the family's socioeconomic status and size were explored. Characteristics of the parents such as their attitudes, beliefs, values, commitments, and personal resources which will influence the way that they appraise themselves, their child and their situation were suggested as being essential to our understanding of parental response and experience of stress. An evaluation of parental coping efforts was deemed to be crucial to the examination of the impact of the special needs child but has been undertaken infrequently. The outstanding importance of social resources in aiding parents was underscored (Peterson & Wikoff, 1987; Short-Degraff, 1987).

That the supportive process is poorly understood, however, was also emphasized. Supports have rarely been examined in terms of their costs and benefits to the family as a whole. Special education programs, for example, may be beneficial to the development of the child but may create additional stress for the family if they make excessive demands on the time and energy of the mother or other family members. Finally, that characteristics associated with the siblings will also be relevant to the examination of the handicapped child within the family context was indicated. Little effort has been directed, however, to the study of the appraisal and coping processes of the siblings nor the way in which sibling response affects and is affected by other aspects of family functioning such as parental attitudes or coping efforts.

Overall, there are a multitude of variables, some of which have been identified here, which will interact in complex ways to influence the family's response to the demands of having a disabled member. While the nature of such interactions are unclear, the importance of adopting a multivariate standpoint which will begin to reveal the complex relationships involved and which emphasizes not only the similarities among families but also the differences, is underscored. Many of the contradictions apparent in the literature regarding the importance of specific variables have no doubt emerged as a result of the use of univariate approaches which have failed to account for the numerous factors affecting the family simultaneously over time. What is needed, however, is an overriding framework for organizing the variables so they can be systematically examined (cf. Winton, 1986). The first step in imposing such a framework is to recognize the need for a family system approach to the evaluation of the impact of the special needs child. It is to this issue that the following section is directed.

2.5 Need for Family System Approach

The handicapped child "is only a focal point in an interrelated dynamic system of parents, siblings, extended family, neighbors, friends, health care [and other] professionals" (Kazak, 1986, p. 265). If we are to truly understand the impact of the child with special needs we must place him/her within the context of this system. We must appreciate the interplay between patterns of family functioning and the unique circumstances that occur in families who have disabled children.

It is no longer appropriate to focus exclusively on the responses of one member (i.e., the mother) as has most often been the case in past research. This will not provide an accurate picture of the family's adaptive process. Schilling et al. (1985) found, for example, that mothers and fathers differed in how they appraised and coped with the stress of rearing a handicapped child. We need, therefore, to concern ourselves with the characteristics of the individual family members, with the patterns of interaction between members, as well as with the emergent qualities of the family as a whole. It is also no longer appropriate to ignore the influence of the external environment within which the family members must interact and be acted upon.

Furthermore, the challenges imposed by the handicapped child require consideration within the context of other demands facing the family throughout its developmental history. Families can be expected to be confronted by a variety of demands which are independent of those associated with the developmentally delayed child but which may further tax the family's resources for coping with stressors and strains. Stress is likely to result if there is an actual or perceived imbalance between demands (e.g., challenge, threat) facing the family and the family members' capability (i.e., appraisals, resources, coping) for meeting these demands (McCubbin & Patterson, 1983a).

Olson et al. (1983, p. 30) identified seven general stages of family development. These were: young couples without children; families with infants and preschoolers; families with school age children; families with adolescents in the home; launching families; empty nest families; and families in retirement. Within each of these stages families routinely experienced a number of stressors (i.e., "normative or non-normative life events affecting the family at a discrete point in time that produces change in the family social system", p. 118) and strains (i.e., "residuals of family tension which remain from unresolved stressors or that are inherent in ongoing roles", p. 118). Major strains for childbearing families, for example, related to financial and business strains, intrafamily strains (e.g., increase in the number of tasks not getting done), pregnancy strains, and work-family strains (e.g., decrease in satisfaction with job or career). While financial and work-family strains continued to plague many families with school age children, intrafamily strains generally increased (e.g., increase in husband's time away from family, increased difficulty in managing children, increase in conflict among children in the family, increase in the amount of "outside" activities in which children were involved, further increase in tasks not getting done). Within succeeding stages some previous strains persisted, others abated, and still others became manifest.

In addition to such ongoing strains, family changes or transitional events such as marriage, birth of a baby, child's entrance into school, or change of residence are generally considered to be particularly stressful in that they disrupt family routines and require family reorganization and adjustment. They often entail changes in structure (e.g., movement of members in and out of the family), shifts in family roles, and tension created by changes in the needs of the individual family members as they mature (Olson et al., 1983, p. 115).

Apart from normative or expected stressors and strains which are part of the family's ongoing development, families may experience other unexpected or non-normative events such as severe illness or job loss which add to the demands already facing the family and which may serve to further deplete available resources.

It is evident, then, that the demands facing individuals and families are not static but will vary over time. McCubbin and Patterson (1982, 1983b) have advanced the concept of "pile-up" to describe an accumulation of stressors and strains and have suggested that an excessive number of changes and demands occurring over a relatively short period of time have a high probability of disrupting the family unit. If the family's resources are already overtaxed the family members may be less able to make further adjustments when faced with additional demands.

Families with children having special needs would appear to be at particular risk for experiencing "pile-up" since they are required to cope on a continuous basis with the numerous and ever changing demands associated with the special needs of the child in addition to other stressors and strains which emerge in all families as a consequence of ongoing development, structural reorganization, and unpredictable disruptions. Hence, in considering the adaptive process of families having handicapped children, it is important to be aware of the stresses and strains occurring in addition to those directly associated with the special needs of the child.

Overall, then, a model of family adaptation which incorporates the psychological, intrafamilial, and social variables, such as those described in this chapter, will be required in order to adequately assess the impact of the handicapped child on family functioning. McCubbin and his associates have made considerable progress in developing a model of family adaptation under conditions of both normative and extraordinary stress (see Figley & McCubbin, 1983; McCubbin & Figley, 1983). This complex multivariate model attempts to integrate the individual, family, and social variables which simultaneously determine the family's response to stressors and changes. It was originally termed the Double ABCX Model of Adjustment and Adaptation and evolved out of an attempt to expand Hill's ABCX family crisis framework (Hill, 1949) to include post-crisis variables (see McCubbin & Patterson, 1983b). The aim was to develop a model which would not only be able to predict the degree of disruption in functioning a family was likely to experience in the face of a particular stressor event or change in the family system, but also the family's capacity to adapt and achieve a new balance in functioning after a major disruption or crisis has occurred. Recently the model has been further expanded to include the dimension of family typology and has been renamed the T-Double ABCX Model of Family Adjustment and Adaptation (McCubbin & McCubbin, 1987).

This model would appear to have considerable potential for enhancing our understanding of the way families function in the face of the chronic long-term stressors inherent in raising a handicapped child. The Double ABCX model has been applied by McCubbin and his associates to families dealing with cerebral palsy (McCubbin et al., 1982) and myelomeningocele (Comeau, McCubbin, & Nevin, 1980). The T-Double ABCX model is outlined in the following chapter.

CHAPTER III

THE T-DOUBLE ABCX MODEL OF FAMILY ADJUSTMENT AND ADAPTATION

3.1 Introduction

The T-Double ABCX Model of Family Adjustment and Adaptation developed by McCubbin and his associates (McCubbin & McCubbin, 1987) attempts to describe families at two stages in their response to life changes, transitions, and demands. The first stage is the pre-crisis Adjustment phase and is concerned with those family "types, strengths, and capabilities" which explain why some families are better able to adjust to relatively minor changes, transitions, or demands which do not require major alterations in family functioning (i.e., boundaries, rules, or patterns of behavior). Some events and transitions, however, do require or result in a major shift in the current level of family functioning. In such a situation a crisis will emerge, where crisis is defined as "a state of family system disorganization which is characterized by the family's situational inability to restore stability, by its cyclical trial and error struggle to reduce tension [emerging as a result of demand-capability imbalance] complemented by efforts to make changes in family structure and patterns of interaction which also contribute to the family's instability" (McCubbin & McCubbin, 1987, p. 14).

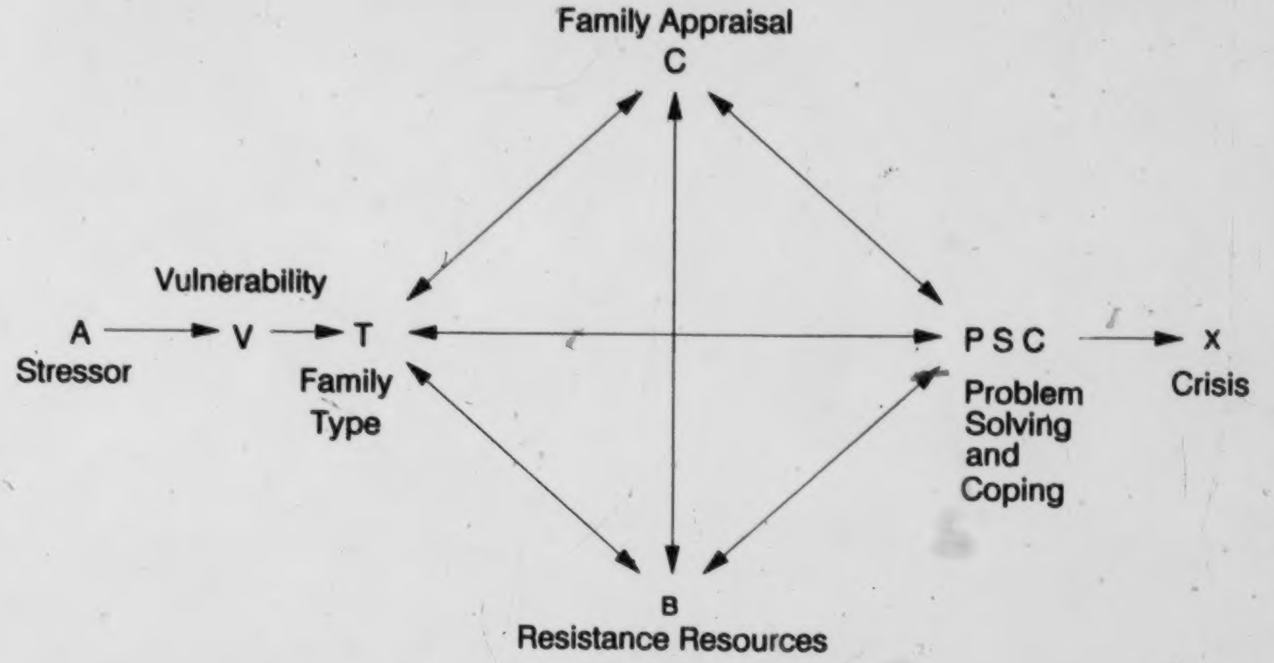
The second stage in the T-Double ABCX model, therefore, is the Adaptation phase. It is concerned with the family's "types, strengths, and capabilities" which are required or employed to manage a major event requiring family reorganization and adaptation. In other words, the Adaptation phase focuses on "family efforts over time to recover from a crisis situation" and to "achieve a new balance and fit at both the individual-to-family and the family to community levels of functioning" (McCubbin & McCubbin, 1987, pp. 14-15).

It may be assumed that the birth of a child with significant handicaps (or the point at which special needs become apparent) will create a crisis situation which can never be completely resolved (i.e., due to the necessity of managing a chronic demand-capability imbalance) and thus requires continuous adaptive efforts on the part of the family members. This will be true irrespective of the previous level of family adjustment (although it would be reasonable to expect that families who are better able to negotiate minor changes, transitions, and demands are also likely to be better able to deal with more significant challenges). Hence, it will be the Adaptation phase of the T-Double ABCX model which is the major focus in the current research. In order to maintain clarity and theoretical continuity, however, the Adjustment phase is outlined briefly in the following sections prior to a more detailed review of the Adaptation phase of the T-Double ABCX model.

3.2 The Family Adjustment Phase

The Adjustment phase of the T-Double ABCX model is illustrated in Figure 3.1. As can be seen, the dimensions

Figure 3.1
Outline of the Adjustment Phase of the T-Double ABCX Model



Adapted from McCubbin and McCubbin (1987) are: (A) the stressor event or transition; (V) the family's vulnerability; (T) the family type; (B) the family's resistance resources; (C) the family's appraisal of the stressor event; and (PSC) the family's problem solving and coping capacity. Each of these dimensions will interact to determine (X) the family's level of adjustment to the stressor event or its transition into a crisis situation.

In general, at the time a stressor has an impact on the family system, the family can vary along a continuum of vulnerability from low to high depending upon its current level of intrafamily and social resources (i.e., resistance resources). Ongoing strains resulting from marital conflict, for example, may result in increased vulnerability to further disruption in family functioning as a result of the additional stressor event. According to McCubbin and McCubbin (1987), when a family is initially faced with a stressor or transition it proceeds through an up and down course of adjustment which is "characterized by: the experiencing of a cluster of demands which include (a) the stressor event or transition; (b) the hardships directly associated with this situation; and (c) prior strains already existing in the family system." (p. 13). Generally, during this phase the family attempts through its appraisals, problem solving, and coping efforts to make minor adjustments in its usual mode of functioning with minimal disruption in established patterns of interaction and structure. McCubbin and McCubbin (1987, p. 13) describe these efforts as family resistance to change. In some cases, however, significant change cannot be avoided and the family will enter a crisis situation where major alterations in established patterns of functioning are demanded. In order to further clarify this adjustment process and/or transition into a crisis situation, each of the components of the Adjustment phase are described in some detail in the following sections.

3.2.1 Stressor/Transition Demands (Factor A)

According to McCubbin and McCubbin (1987, p. 5), a stressor is an event or transition within the family unit such as the birth of a child, a job loss, or purchase of a home, which produces, or has the potential to produce change in the family system. Such changes might include alterations in the family's boundaries, goals or values, or modification in the patterns of interaction amongst the various family members. The severity of a stressor is a function of the extent to which it disrupts the family's stability, or places demands on the resources or capabilities of the family which may in turn threaten the family's stability. For example, a short-term illness of the family's primary breadwinner would be expected to cause less disruption in the functioning of the family than would a long-term illness where the family's financial, emotional, physical, and social resources may be severely depleted.

3.2.2 Family Vulnerability: Pile-up and Family Life Cycle Stage (V Factor)

Family vulnerability is defined by McCubbin and McCubbin (1987) as: "the interpersonal and organizational condition of the family system shaped, in part, by : (1) the pile-up of demands on or within the family unit co-occurring at the onset or impact of another stressor or transition and (2) the family's life cycle stage with all of its normative demands and variability in resources and strengths" (p. 5). For example a single parent family with very young children would likely be more vulnerable to disruption by the serious illness of the mother than would be a two parent family with grown children.

3.2.3 Family Type: Profile of Family Functioning (T Factor)

McCubbin and McCubbin (1987) describe a family's type or typology as "a set of basic attributes about the family system which characterizes and explains how the family typically appraises, operates, and/or behaves." (p. 5). According to these authors, "these predictable and discernible patterns of family behavior, which are reinforced by rules and routines, play an important role in explaining family behavior in the face of stressful life events and transitions" (p. 5.). For example, families high on the dimensions of family hardiness and coherence (i.e., Regenerative Families), are, according to McCubbin and McCubbin (1987, p. 6), better able to endure hardships and promote intrafamily strengths of flexibility, predictability, and marital/family satisfaction.

3.2.4 Resistance Resources: Capabilities and Strengths (B Factor)

In the Adjustment Phase the family's resistance resources are described as those resources and strengths which facilitate the family's problem solving and coping efforts and contribute to the family's capacity to prevent a transition or stressor from creating a crisis or major disruption in family functioning. The number of potential resistance resources a family may possess are many but might include such characteristics as: financial well-being; flexibility in performing family roles; mutual respect amongst family members and intrafamily cooperation; effective communication amongst family members; spiritual faith; and extended family support. A family's resources and capabilities can be expected to vary across the life cycle.

3.2.5 Family Appraisal: Focus on Stressor (C Factor)

The subjective definition the family members make of the seriousness of the stressor event or transition and its attendant hardships constitutes the C factor. The family's appraisal of the significance of a stressor will, in part, be determined by the family members' values and previous experience in negotiating change and dealing with crises. A child leaving home, for example, may be viewed by one set of parents as an accomplishment and the beginning of greater personal freedom, and by other parents as an overwhelming loss and a precursor to loneliness.

3.2.6 Family Management: Problem Solving and Coping (PSC Factor)

Family members efforts to manage a stressful situation through their problem solving and coping skills comprises the PSC Factor of the model. According to McCubbin and McCubbin (1987): "Problem-solving refers to the family's ability to define the stressor and the situation into manageable components, to identify alternative courses of action, to initiate steps to resolve the discrete issues and ultimately solve the problem." (p. 11). These same authors define coping "as the family's strategies, patterns and behaviors designed to maintain and/or strengthen the organization and stability of the family unit, maintain the emotional stability and well-being of family members, obtain and/or utilize family and community resources to manage the situation, and initiate efforts to resolve the family hardships created by the stressor/transition" (p. 11). McCubbin and McCubbin (1987, p. 13) identify three general classes of adjustment coping strategies which can be implemented by families. These include: "avoidance", "elimination", and "assimilation". Avoidance describes those efforts by the family to ignore the demands created by the stressor in the hope that they will disappear. Elimination involves the active efforts of the family to reduce the demands of the stressor by altering or removing the stressor or changing the appraisal of the stressor and its severity. Assimilation refers to efforts by the family to incorporate the demands associated with the stressor into the family's existing structure. The family has an adequate supply of resources to meet these demands and very little change in the established patterns is required.

3.2.7 Family Adjustment, Maladjustment and Crisis: Demand for Change (X Factor)

Overall, McCubbin and McCubbin (1987) suggest that "adjustment can be viewed as a short-term response by families, adequate to manage many family life changes, transitions, and demands" (p. 13). These life events/transitions do not generate significant difficulties for the family system given its type, vulnerabilities, appraisals, resources, and coping skills. The family is able to accommodate the required changes without major disruption in overall patterns of behavior. In some cases, however, a stressor or transition will create hardships or demands which are many and severe and for which adjustment coping strategies are insufficient. Substantial alterations in the family's rules, boundaries, and established patterns are required. According to McCubbin and McCubbin (1987), "families in this type of situation are not likely to achieve stability with ease and without making substantial changes in the family system [and] consequently, they will experience maladjustment and the resulting stage of crisis" (p. 14). McCubbin and McCubbin go on to suggest that this type of situation is likely to occur in "circumstances in which (a) the nature of the stressor or transition involves a structural change in the family system (e.g. parenthood, divorce); (b) the nature, number, duration of demands depletes the family's existing resources (e.g. financial savings spent); (c) the number and persistence of prior unresolved strains also tax the family's resources (e.g. continued conflict with prior spouse); (d) the family's capabilities and resources are basically inadequate or underdeveloped to meet the demands (e.g. insufficient income to meet child-care demands or to be a single parent); and (e) the family overtly or covertly seizes the opportunity to produce structural changes in the family unit by allowing or facilitating a demand-capability imbalance or family crisis (e.g. allowing unresolved marital conflict to continue as a prelude to dissolution of a marriage)" (p. 13).

In the case of the birth or diagnosis of a child with moderate to severe handicaps, there will not only be a structural change occurring in the family system, but the family will, most surely, also experience a significant demand-capability imbalance where its capabilities and resources are inadequate or underdeveloped to meet the multitude of new stressors and demands emerging as a result of the child's special needs. The outcome will undoubtedly be a period of instability and crisis as the family members attempt to regain family stability and begin the process of adaptation. It is this post-crisis Adaptation Phase of the

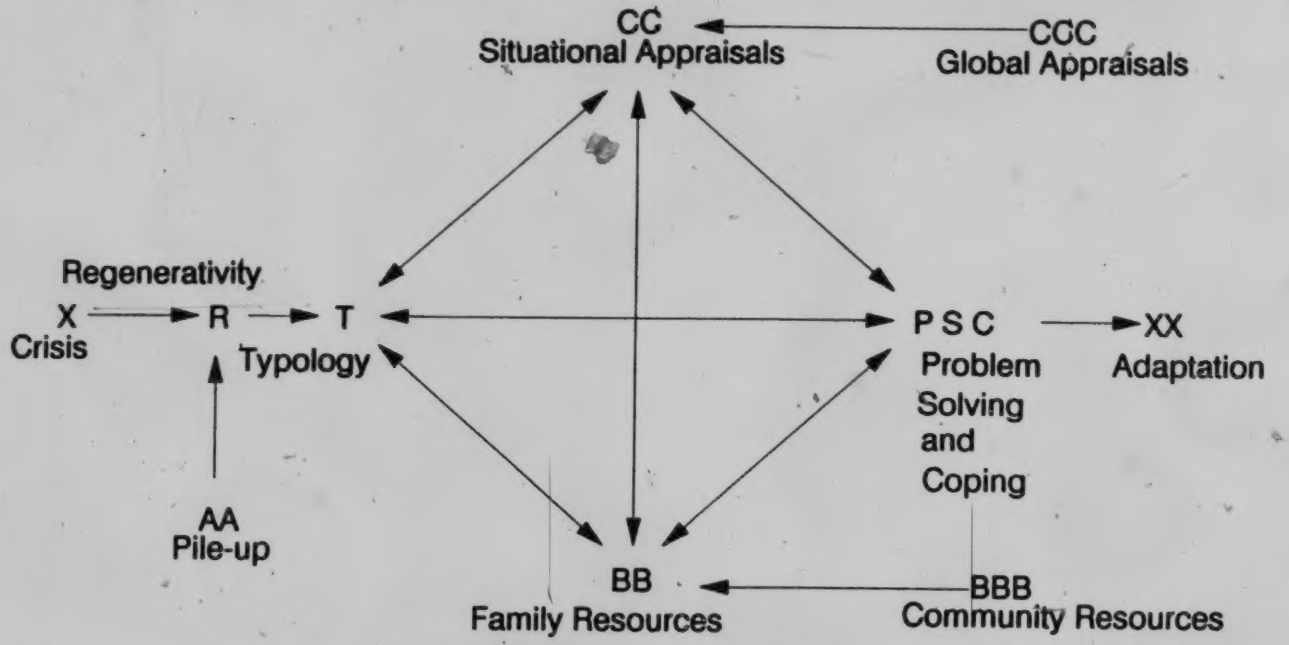
T-Double ABCX Model that is the topic of discussion in the following sections.

3.3 The Family Adaptation Phase

The Adaptation Phase of the T-Double ABCX model is illustrated in Figure 3.2. As can be seen, the dimensions are (X) the crisis situation; (R) the family's level of regenerativity which is largely determined by (AA) the pile-up demands on the family system; (T) the family type; (BB) the intrafamily resources available; (BBB) the family's community resources; (CC) the family's appraisal of the situation; (CCC) the family's global appraisals or world view; and (PSC) the family's problem solving and coping resources. Each of these dimensions will interact to determine (XX) the family's level of adaptation in response to a crisis situation.

According to McCubbin and McCubbin (1987, p. 23), families in crisis who experience excessive demands and depleted resources find that they are required to make alterations in their existing structure. These may involve changes in role prescriptions, patterns of interactions, family goals or rules. Once these initial adjustments have been made, the family must make additional modifications in order to consolidate the changes and facilitate the process whereby the family unit continues to work together in support of the newly instituted changes. "These processes of restructuring and consolidation evolve over time as families work towards adaptation" (McCubbin and McCubbin,

Figure 3.2
Outline of the Adaptation Phase of the T-Double ABCX Model



Adapted from McCubbin and McCubbin (1987)

1987, p. 27). In order to further clarify the adaptive process, each of the dimensions of the adaptation phase of the T-Double ABCX model are discussed in some detail in the following sections.

3.3.1 Pile-up of Family Demands (AA Factor)

The concept of pile-up has been defined as the accumulation of demands (stressors, strains, hardships) facing the family at any point in time. These demands can emerge from individual family members (e.g., marital problems, sibling conflict), or from the community (e.g., work pressures). McCubbin and McCubbin (1987, p. 16) cite five general sources of pile-up in the family system. Inherent in the crisis situation itself will be numerous hardships (i.e., demands associated specifically with the stressor event). In the case of the child with significant handicaps, these hardships are numerous and include such challenges as finding relief care, identifying appropriate educational programs, and mastering specialized medical and educational treatments. Normative transitions also place additional demands on the family and are a further source of pile-up. A third source of pile-up emerges from prior strains which have been defined as "residuals of family tension which remain from unresolved family stressors or that are inherent in ongoing family roles" (Olson et al., 1983, p. 118). A father's long working hours, for example, may increase the demands on the mother at home caring for the handicapped child. The consequences of family efforts to cope may also result in additional stressors and strains and further contribute to the pile-up of demands. In many families, for example, the mother will give up a job and become a full-time parent in an effort to cope with the demands of the handicapped child. This may, in turn, result in additional financial strains for the family as well as in role strain for one or both parents. Finally, McCubbin and McCubbin (1987) cite intrafamily and social ambiguity as a fifth source of pile-up. They suggest that some ambiguity is inherent in any crisis situation since change and the need for adaptation produce uncertainty about the future. The family may experience ambiguity about its "structure, about family roles, rules, responsibilities and durability" (p. 17). Furthermore, according to McCubbin and McCubbin (1987, p. 17), society's policies or programs are important in aiding families to cope with a crisis. In the absence of adequate cultural or community prescriptions or solutions, the demands on family members to find their own solutions will increase. The situation of having a handicapped child is fraught with ambiguities. The cause of the child's condition is often unknown. The child's developmental progress and future outcome are frequently unpredictable. The best approach to education and treatment may not be clear. Others in the community may not understand the family's unique difficulties. The development of community policies and programs to provide guidance and support to families is in its infancy and parents are often left to find solutions to problems through trial and error. All of these sources of ambiguity are likely to contribute to the pile-up of demands facing the family of a handicapped child.

3.3.2 Family Strengths and Resources (BB Factor) and Community Resources and Supports (BBB Factor)

The family's capability to meet demands is determined in part by the resources available. These resources may be tangible (e.g., money) or intangible (e.g., self-esteem) and may be "characteristics, traits, or competencies" of the individual family members, or of the family unit as a whole. The importance of individual or personal resources in facilitating coping efforts was discussed in Chapter II. It was suggested that personal attributes such as social skills, physical and emotional health, and problem solving ability can be drawn upon to help individuals withstand the stressors with which they are faced. Important personal resources identified by McCubbin and McCubbin (1987, p. 17) are innate intelligence, knowledge, and skills acquired through education training or experience, physical and emotional health, self-esteem, and sense of mastery.

Family system resources which have been identified by McCubbin and McCubbin (1987) as being significant in eliminating or mediating the impact of demands include: financial well-being and resource management skills; a sense of unity or cohesion within the family which includes mutual trust, appreciation, support and respect for the individuality of family members; adaptability (i.e., the ability of the family to change its "role and rule structure" in response to situational and developmental demands); and instrumental and affective communication skills. According to McCubbin and McCubbin (1987) "quality communication is of particular importance to stress management in families because it enables the group to coordinate their efforts to manage demands and because it helps reduce ambiguity, which is part of what makes change so stressful". (p. 18).

McCubbin and McCubbin (1987, p. 18) also acknowledge the importance of community resources and supports in facilitating the family's adaptive process. The importance of community supports for families coping with the demands of a handicapped child was discussed in detail in Chapter II. It was suggested that formal supports need to be evaluated from the viewpoint of the entire family and within the context of the family's current situation. Families will vary in terms of the type and level of support that is optimum. Specific sources of support will be differentially appropriate not only for different families but also at different stages within a family's developmental history.

3.3.3 Family Typology (T Factor)

As described in the earlier discussion of the Adjustment phase of the T-Double ABCX model, Family Typology is defined "as a set of basic attributes about the family system which characterize and explain how a family system typically appraises, operates, and/or behaves" (McCubbin and Thompson, 1987, p. 35). The Circumplex Model of family systems, for example, defines sixteen family types or typologies based upon the family strength dimensions of adaptability and cohesion (see Olson & McCubbin, 1982). According to McCubbin and Thompson (1987) "these predictable and discernible patterns of family life, which are reinforced by rules and norms and guided by family values and goals", can be expected to influence family response in a crisis situation (p. 35). McCubbin and his associates have developed several family typologies based upon other family strength dimensions (see McCubbin & Thompson, 1987).

3.3.4 Family Appraisals (CC and CCC Factors)

It was suggested in Chapter II that the perceptions which parents of children with special needs have of themselves, their child, and their situation will strongly influence their efforts to cope with the challenges with which they are faced. Parents, for example, who view themselves as being competent in managing their child's health problems are likely to experience less stress than parents who do not feel confident in their ability to cope with their child's medical needs. The T-Double ABCX Model acknowledges the importance of family appraisals as they affect the adaptive process. It is proposed that a shared positive appraisal of the situation will facilitate family adaptation after a crisis while it is recognized that an increase in intrafamily strains is a likely result of discrepant perceptions between members. The model includes appraisals at three levels. The first two levels comprise the CC factor and the third level represents the CCC factor.

At the first level are the family members' appraisals of the specific stressor event, strain, or transition. At the second level are the family's situational appraisals which encompass the members' subjective assessments of the demands facing the family and the existing capabilities to meet these demands. According to McCubbin and McCubbin (1987), when resources and/or coping behaviors are viewed as being insufficient relative to perceived demands, there is a demand-capability imbalance (perceived or real) which results in stress and tension within the family.

McCubbin and McCubbin (1987) also suggest that "families hold a set of beliefs or assumptions about themselves in relationship to each other and about their family in relationship to community and systems beyond their boundaries" (p. 21). It is this global set of beliefs and assumptions, termed family schema, which comprise the third level of appraisal (i.e., the CCC factor). The CCC factor is assumed to transcend and influence the more specific situational appraisals and to be more stable over time. According to McCubbin and McCubbin (1987) "families who reveal a strong family schema emphasize their investment in themselves, their values and goals, their investment in the family's collective "we" rather than "I", their sense of shared control and trust in others, as well as their optimistic view of life situations complemented by a relativistic view of life circumstances and a willingness to accept less than perfect solutions to their demands". (p. 21).

3.3.5 Adaptive Coping (PSC Factor)

The importance of examining the coping efforts of the parents and siblings of handicapped children was outlined in Chapter II. The need for a shift away from viewing parents of handicapped children only in terms of their stresses and weaknesses towards an examination of their competencies and strengths was emphasized. Within the context of the T-Double ABCX Model, McCubbin and McCubbin (1987) define coping behavior as "a specific effort (covert or overt) by which an individual (or group of individuals such as the family) attempts to reduce or manage a demand on the family system". (p. 22). Family coping, according to these researchers, can be viewed as coordinated problem solving behavior of the whole system or may also involve a synthesis of complementary efforts by individual family members. McCubbin and McCubbin (1987, p. 22) outline five general classes of coping response which may be employed by the family to maintain or restore balance between demands and capability. These include direct action to reduce the number and/or intensity of demands (e.g., working on the handicapped child's self-help skills), action to acquire additional resources not already available (e.g., respite care), efforts to maintain existing resources so that they can be allocated and re-allocated to meet changing demands (e.g., doing things as a family to maintain cohesiveness), efforts to reframe the situation to make it more manageable or tolerable (e.g., emphasizing spiritual beliefs), and efforts to manage the stress associated with continuing strains (e.g., engaging in recreational activities).

McCubbin and McCubbin (1987, p. 22) also indicate that specific coping behaviors can be grouped together into patterns. These patterns are more general ways of responding which are appropriate across different kinds of situations. McCubbin and McCubbin further suggest that when coping is viewed within the context of chronic stressors, as in the case of raising a handicapped child, it may be more appropriate to consider coping in terms of more general patterns rather than in terms of situation specific responses. McCubbin et al. (1982), for example, in a study of parents of children with cerebral palsy, found that behaviors which served to maintain family integration and cooperation were enhanced by the parents and formed a distinct pattern of coping response.

3.3.6 Adaptation (XX Factor)

McCubbin and McCubbin (1987) define the family adaptation factor as "the outcome of family efforts to achieve a new level of balance and fit after a family crisis" (p. 15). During the process of adaptation a demand-capability balance is sought between the family unit and the community of which the family is a part. Adaptation is achieved through reciprocal relationships where the demands at one level (i.e., individual, family, community) are me[illegible] capabilities at another. According to McCubbin and McCubbin (1987, p. 24), however, families will seldom be able to achieve perfect individual-family and family-community balance where all needs are met. This would be particularly true in families having children with significant handicaps since the demands are many and constant. In such cases, these authors suggest that successful adaptation will require a willingness to accept a less than perfect resolution.

3.4 Summary

It has been suggested that the T-Double ABCX Model of Family Adaptation may be a useful framework for conceptualizing the process by which families adapt to the chronic stressors and strains inherent in raising a child with special needs. While many variables which have been associated with family members' increased vulnerability to stress (e.g., severity of handicapping condition, increased financial demands, lack of respite care) have been identified in the literature pertaining to handicapped children, there still lacks a coherent picture of how some families are able to manage surprisingly well in the face of overwhelming demands, while other family systems experience considerable disruption. This may, in large part, be attributable to a failure on the part of researchers to take into account the dynamic interplay between the nature of the demands facing the family at any point in time, including those not directly associated with the special needs of the child, and the family's capability (i.e., appraisals, resources, coping) to meet these demands. The T-Double ABCX Model has resulted from concerted efforts spanning nearly forty years to understand the process by which families are able to achieve satisfactory adaptations to crisis experiences. It is a model which would appear to be particularly well suited to the study of families coping with the needs of children having significant handicaps. The model looks at both the demands facing the family as well as the family's strengths and capabilities for meeting these demands. It is capable of incorporating the handicapped child, parent, sibling, and social variables which have been deemed important by clinicians working with these families but places them within a framework of overall family functioning. It is a dynamic model which allows for a changing demand-capability balance over time. This is particularly important since it is likely that the family's level of adaptation will fluctuate over time as both demands and resources change with the development of the child and the family.

From an intervention perspective the model should facilitate the assessment of families and their needs. If a significant demand-capability imbalance exists within a family, it should be possible to identify it, and to undertake appropriate interventions. For example, intervention might be directed towards enhancing the internal resources of the family through improving the affective communication between the spouses, or it might be directed towards enhancing the external resources of the family by arranging for parent respite care.

In summary, there is a need for a more coherent framework for looking at the way families manage in the face of the extraordinary demands inherent in raising a child with moderate to severe handicaps. It has been emphasized here that the T-Double ABCX Model of Family Adaptation may be useful in this capacity. The research study described in the following chapters was directed towards the investigation of several of the key dimensions of the T-Double ABCX Model, and the significance of these dimensions in predicting adaptation in a small sample of families having children with moderate to severe handicaps.

CHAPTER IV

EXPERIMENTAL DESIGN

4.1 Introduction

The study was designed to examine four critical dimensions of the T-Double ABCX Model of Family Adaptation in relation to a fifth dimension which was the adaptive functioning of a sample of families raising preschoolers having mental and, in some cases, physical handicaps. The five dimensions investigated were: (1) Pile-up of Family Demands (AA Factor), (2) Family Strengths and Resources (BB Factor), (3) Community Resources and Supports (BBB Factor), (4) Family Problem Solving and Coping (PSC Factor), and (5) Family Adaptive Functioning (XX Factor). Each of these dimensions was assessed by means of a standardized self-report instrument completed by both mothers and fathers. A structured interview was also conducted with each set of parents in order to gather demographic information (e.g., parental age, education, occupation, and income). In addition to standard demographic data, information regarding the child's diagnostic and medical history, and information pertaining to parental satisfaction with the child's Early Intervention or day care program, including any decrease or increase in demands on the family resulting from the child's participation in the program, was also collected.

In the remaining sections of the chapter, the methods employed to identify families willing to participate in the study, and the criteria employed for selecting the sample of families are presented. The procedures for data collection and the instruments employed are also described. Finally, the methods of data analysis are outlined.

4.2 Sample

Sixteen families with developmentally delayed children between the ages of two and five were included in the analyses. Parents were solicited through three early intervention programs and five integrated day care programs within Edmonton, Alberta and surrounding areas. The early intervention programs were of two types, center-based and home-based. Children involved in the center-based program participated full-time in a self-contained classroom setting within an elementary school. Children involved in the home-based program received daily treatments within their own homes. The programs were designed by professionals and were carried out daily by teacher aids. Children attending integrated day care generally received some individualized programming over and above the regular day care routine. The involvement of families from several different programs allowed for a broader sampling of the community of mentally handicapped preschoolers and their families.

Criteria for inclusion of the handicapped children were: (a) chronological age between two years and five years; (b) a moderate to severe degree of mental handicap as indicated by a developmental age of approximately one half the chronological age; and (c) other physical handicaps could be present as long as criteria for mental handicap were met, and as long as the degree of physical impairment did not preclude the administration of the Bayley Scales of Infant Development which were used to assess developmental age. The decision to restrict the age of the children to the preschool period was to ensure that the majority of families would be at approximately the same developmental stage and would be experiencing similar developmental transitions. The restrictions on the type and severity of the handicap were made in an attempt to make the sample of handicapped children as homogeneous as possible, and to ensure that the special needs of the child were sufficient to demand considerable adaptive efforts on the part of the family.

Criteria for inclusion of the parents were as follows: (a) two parents (natural or step) currently living in the home; (b) willingness on the part of both parents to devote approximately three hours of their time to the completion of paper-and-pencil questionnaires, and to participate in a structured interview of approximately 40 minutes duration; and (c) willingness to have their child's developmental level assessed.

Although the importance of including the siblings directly in any studies of families of handicapped children has been emphasized it was not possible to do this in the current investigation. The young age of many of the siblings precluded assessing the dimensions of interest.

4.3 Procedure

Teachers from each early intervention and day care program were asked to identify children who fit the criteria for inclusion in the study. Once this screening was performed, the parents of the children selected were notified of the research project in a letter distributed by the teachers. Parents interested in participating were contacted in order to arrange a meeting to further explain the requirements of the study, as well as the procedures used to protect the legal and ethical rights of the family (e.g., confidentiality of information, right to withdraw from the study at any time). A written consent for participation was also obtained at this time. It should be noted that this sampling procedure unfortunately did not allow for random selection of families having pre-school aged children with intellectual handicaps. The sample could best be described as a convenience sample.

Each family received three visits to their home by members of the research team. During the first home visit the Bayley Scales of Infant Development were administered to the child by a research assistant experienced in the use of this instrument. Several questionnaires were also introduced to the parents at this time and left for them to complete prior to the next visit. These questionnaires pertained to: life events or changes experienced by the family over the past year, sources of stress related to parenting a handicapped child, and intrafamily resources and social supports. During the second session any problems experienced in completing the first set of questionnaires were addressed. A second set of questionnaires was introduced and left for completion. These questionnaires pertained to parental coping strategies, and the dependent variable of overall family functioning. The third session dealt with any other problems related to the completion of the second set of questionnaires. During this third visit a structured interview was also conducted by either this investigator or a trained research assistant. The interview covered the following general areas: (a) background information (family composition; occupation, education, and income data); (b) program information (program type, nature and extent of parental involvement in program, parental satisfaction with program content and program staff, overall costs and benefits of the program to the family); (c) parental perceptions of informal and formal support (type of support from other professionals or agencies apart from the school, type of support from friends and relatives, satisfaction with all areas of support, types of additional support required); and (d) the diagnostic and medical history of the child.

4.4 Instruments

4.4.1 Bayley Scales of Infant Development

The Bayley Scales of Infant Development (Bayley, 1969) were designed to assess an infant's developmental status and to determine the extent of any deviation from normal development. The test is comprised of three components: the Mental Scale (163 items), the Motor Scale (81 items), and the Infant Behavioral Record (30 behaviors). The mental scale taps skills associated with the infant's intellectual development including sensory-perceptual acuities and discrimination, acquisition of object constancy, and the initial stages of verbal communication. The Motor Scale is designed to assess body control, coordination of large muscles, and manipulatory skills of the hands and fingers. The Infant Behavior Record consists of a number of descriptive rating scales for behaviors typical of children up to thirty months of age.

Administration of the Bayley Scales must be undertaken by a trained examiner. For both the Mental and Motor Scales the examiner establishes the child's basal and ceiling levels. The manual provides detailed criteria for scoring. Raw scores (i.e., the number of items passed) for each scale are converted to standard scores by reference to tables provided in the manual. The standard scores from both the Mental Scale (i.e., the Mental Development Index) and the Motor Scale (i.e., the Psychomotor Development Index) have a mean of 100 and a standard deviation of 16. The Infant Behavioral Record is filled out by the examiner upon completion of the Mental and Motor Scales. A table is provided in the manual of the distribution of ratings for the 14 age groups in the standardization sample. In addition, a verbal description of the characteristic behaviors of each age group is provided.

The Bayley Scales of Infant Development have been very widely used and the reliability and validity of the instrument has been well established. Across the 14 age groups in the normative sample, split-half reliability coefficients ranged from .81 to .93 for the Mental Scale and from .68 to .92 for the Motor Scale. Test-retest reliability over a one week period was reported to be satisfactory for a small group of 28 infants. Tester-observer agreement in scoring was found to be 89.4 percent on the Mental Scale and 93.4 percent on the Motor Scale for the administration to a group of 90 infants (Bayley, 1969). The correlation of the Stanford-Binet IQ and the Bayley Mental Development Index was found to be .57 over the six month age overlap of the two tests, thus providing some evidence of the concurrent validity of the scale (Bayley, 1969).

For the purposes of the present study the Mental Scale scores from the Bayley were employed as an index of the severity of the child's handicapping condition(s). Although the Motor Scale was administered, these scores were not employed in the subsequent analyses because a number of children having no physical disabilities scored above the test ceiling on the Psychomotor Development Index.

4.4.2 The Life Experiences Survey

The Life Experiences Survey (LES; Sarason, Johnson, &

Siegel, 1978) is a 57-item self-report measure that requires respondents to identify events that have been experienced during the preceding year. The scale is comprised of two sections. Part I consists of a list of 47 specific events plus three open spaces in which respondents may indicate additional events which they may have experienced. The events listed in this section represent life changes that are common to individuals in the general population and are similar to those found on the more well known Schedule of Recent Experiences (SRE; Holmes & Rahe, 1967). The ten events listed in Part II are specific to a student population and were not administered in the current study. Subjects are required to rate the desirability (i.e., positive or negative) of the events they have experienced, as well as the impact of the event at the time of occurrence (i.e., on a 7-point scale ranging from extremely negative (-3) to extremely positive (+3)). The LES yields a positive change score, a negative change score, and a total change score which represents the total amount of rated change (desirable and undesirable) experienced by the individual. The impact and desirability ratings are unique to this life events scale and avoid the problem of assuming that the same event is experienced identically by all individuals. The authors provide some limited normative data based on a sample of college freshman. Means, standard deviations, and percentile ranks for both males and females are available for the positive, negative, and total LES scores for PART I. The authors do suggest that the mean scores for this college sample are likely to be somewhat lower than might be expected in the general population (Sarason et al., 1978).

Test-retest reliability values, for a five to six week interval, ranged from .63 to .64 for the total change score, from .56 to .88 for the negative change score, and from .19 to .53 and for the positive change score. Sarason et al. (1978) suggest, however, that these may be an underestimate of the reliability of the instrument because changes in test-retest scores may reflect the actual occurrence of additional life events rather than inconsistencies in reporting.

Relationships between life change scores and a measure of social desirability were nonsignificant suggesting that the LES is relatively free from the influence of social desirability response bias (Sarason et al., 1978).

Within the context of the current research, the Life Experiences Survey was completed independently by both mothers and fathers. This measure, in conjunction with the measure of parenting stress described in the following section, constitutes an assessment of the "pile-up" dimension of the T-Double ABCX Model (see Table 4.1).

4.4.3 The Parenting Stress Index

The Parenting Stress Index (PSI; Abidin, 1986) is a 101-item questionnaire designed to identify parent-child systems under stress and to indicate the specific sources

Table 4.1

Measures Employed to Assess the Pile-up, Resources, Coping, and Adaptation Dimensions of the T-Double ABCX Model

Pile-up

Degree of Intellectual Handicap
    - chronological age minus Bayley Mental Age
The Life Experiences Survey (LES)
The Parenting Stress Index (PSI)

Family Resources

Socioeconomic Status (Hollingshead Index)
Family Inventory of Resources for Management (FIRM)

Community Resources

Social Support Inventory (SSI)
Parent Interview-Program Satisfaction Information

Coping

Coping Health Inventory for Parents (CHIP)

Adaptation

Family Assessment Measure (FAM III)

of stress. The PSI yields a total score, 3 domain scores, and 15 subscale scores. The domain scores represent stressors related to child characteristics (Child Domain), parental characteristics (Parent Domain), and situational and demographic factors (Life Stress Scale). The author provides normative data from a large sample of clinic-referred and nonclinical families, allowing test scores to be reported as percentiles or T-scores.

The scale demonstrates good internal consistency with alpha reliabilities ranging from .6 to .9 for the subtest and domain scores, and reaching .95 for the total stress score. Similarly, test-retest reliability values for the Total Stress Score are acceptable, ranging from .96 for a one to three month interval to .65 for a one year interval (Abidin, 1986). The Parenting Stress Index has been used in numerous research projects in the United States and Canada with a variety of normal and special mother-child populations including children with such disorders as cerebral palsy, mental retardation, attention deficit disorder, and prematurity. There is substantial evidence from these studies of both convergent and discriminant validity.

The Parenting Stress Index was completed separately by both mothers and fathers with respect to the handicapped child-parent relationship and constituted a measure of the "pile-up" dimension of the T-Double ABCX model (see Table 4.1). Scores on the Life Stress Scale were not employed in the analyses of the present study because these scores overlapped with the data obtained from the Life Experiences Survey.

4.4.4 Family Inventory of Resources for Management

The Family Inventory of Resources for Management (FIRM; McCubbin, Comeau, & Harkins, 1987) is a 69-item self-report clinical/research instrument to assess family resources. Although designed for use with any family, it was developed on families having children with cerebral palsy or myelomeningocele. The items tap three major resource areas: personal resources, family system internal resources, and social support. Respondents are required to evaluate on a 0-3 scale how well the items describe their family. The scale yields four subscale scores which contribute to a total resource score. The first subscale assesses resources in six areas: family esteem (respect from friends, relatives, co-workers, and among family members); communication; mutual assistance; optimism; problem-solving ability; and encouragement of autonomy among family members. The second subscale taps resources along three dimensions: sense of mastery over family events and outcomes; family mutuality (emotional support, togetherness, cooperation); and physical and emotional health of members. The third subscale reflects the extended family support network, and the fourth subscale examines financial resources. In addition to these four clinical subscales, the instrument also contains a Social

Desirability Index to assess the influence of the social desirability response bias. The authors provide normative data from two large samples of families having chronically ill children (i.e., with cerebral palsy or myelomeningocele).

The scale demonstrates good internal consistency with alpha reliabilities ranging from .62 to .85 for the subtest scores, and achieving .89 for the total score. Test-retest reliability data is not available. McCubbin and Comeau (1987) provide evidence for the factorial, and concurrent validity of the scales. McCubbin and his associates have employed this instrument in several research studies with handicapped children. FIRM scores were found to be related to both a criterion measure of family functioning (i.e., the Family Environment Scales) and the health status of children with myelomeningocele.

For the purposes of the current research this instrument, in conjunction with parental income and education variables and the social support instrument described in the following section, was employed to assess the resources dimension of the T-Double ABCX Model (see Table 4.1). The FIRM was completed jointly by fathers and mothers.

4.4.5 Social Support Inventory

The Social Support Inventory (SSI; McCubbin, Patterson, Rossman, & Cooke, 1983) is a 60-item self-report research/clinical instrument to assess the social support of parents at any stage of parenting. This scale taps five types of affective support and eleven sources of support. The types of support are: emotional, esteem, appraisal, network, and altruistic and are patterned after the original conceptions of Cobb (1976). The sources of support include: spouse or partner; children; other relatives; friends; co-workers; community groups; church; spiritual faith; professionals and service providers; special groups (designed to help with specific problems or responsibilities); and books and television. Respondents indicate on a 3-point scale (i.e., 1-no, 2-yes, 3-yes (a lot)) whether they receive each of the types of affective support from each of the sources. The scale yields a support score for each of the eleven sources and a total support score. Limited normative data is available from the authors.

A test-retest reliability coefficient of .81 was reported by the authors. Evidence for construct validity was provided by a systematic literature review, 22 ethnographic interviews, and completion of the SSI by the same 22 subjects (Cooke, Rossman, McCubbin, & Patterson, 1982).

For the purposes of the current research this instrument, in conjunction with the FIRM, and the resources data obtained from the interview, was employed to assess the Resources dimension of the T-Double ABCX Model (see Table 4.1). The SSI was completed separately by each parent.

4.4.6 Coping Health Inventory for Parents

The Coping Health Inventory for Parents (CHIP; McCubbin, McCubbin, Nevin, & Cauble, 1979) is a self-report clinical/research instrument to assess parents' perceptions of the coping behaviors they are currently employing to manage family life when they have a seriously and/or chronically ill child. The CHIP contains 45 specific behaviors such as "getting other members of the family to help with chores and tasks at home", or "talking with other parents in the same situation and learning about their experiences". Parents are required to rate the helpfulness of each behavior in their specific family situation (i.e., on a 4-point scale ranging from not helpful (0) to extremely helpful (3)). If a coping behavior is not used, the parent indicates the reason by checking (a) "I do not cope this way because I choose not to" or (b) "I do not cope this way because it is not possible". Each of the 45 items loads on one of three coping patterns. The first coping pattern consists of 19 behaviors which focus on parental efforts to enhance family integration and cooperation, and to maintain an optimistic outlook on their situation. The second coping pattern consists of 19 items which involve parental efforts to develop supportive social relationships, and to care for their own psychological and physical well-being. The third coping pattern includes 8 coping behaviors related to parental efforts to acquire knowledge and understanding of their child's special needs through communication with health care professionals and other parents of chronically ill children, and to master any home care treatments. Coping scale scores are obtained from the three coping patterns by summing the parents' "helpfulness" ratings across the items in each pattern. The authors provide normative data (i.e., means and standard deviations) for both mothers and fathers obtained from a large sample of parents having children with either cystic fibrosis or cerebral palsy.

McCubbin (1987) provides evidence for the factorial and concurrent validity of the instrument. McCubbin and his associates have employed the CHIP in a number of research studies with chronically ill and handicapped children. CHIP scores were found to be related to both a criterion measure of family functioning (i.e., the Family Environment Scales; Moos, 1974) and the health status of children with cystic fibrosis. This instrument has also been employed widely by other researchers. McCubbin and his associates undertook a systematic review of the data from twenty-two research studies in which this instrument was employed (see McCubbin, 1987). A total of fourteen different chronic illness or disability conditions were represented including mental retardation, autism, and multiple handicaps.

For the purposes of the current study, the CHIP was employed to assess the coping dimension of the T-Double ABCX Model (see Table 4.1). It was completed individually by both mothers and fathers.

4.4.7 Family Assessment Measure III

The Family Assessment Measure III (FAM III; Skinner, Steinhauer, & Santa-Barbara, 1984) is a self-report instrument that provides quantitative indices of family strengths and weaknesses. FAM III is based upon a process model of family functioning. The process model emphasizes the dynamic interaction between the major dimensions of family functioning and emphasizes the ongoing and interrelated development of the individual and the family (Steinhauer, Santa-Barbara, & Skinner, 1984). The dimensions of family functioning assessed by FAM III which constitute the seven subscales include: task accomplishment, role performance, communication, affective expression, involvement, control, and values and norms. Scale definitions are presented in the manual (Skinner et al., 1984). FAM III consists of three components: a General Scale which focuses on the family as a system, a Dyadic Relationships Scale which examines relationships between specific pairs (dyads) of family members, and a Self-Rating scale which taps the individual's own perception of his/her functioning within the family. The seven dimensions of family functioning are thus examined from three perspectives to provide a comprehensive overview of the family system. The General Scale yields seven subscale scores and a mean score. In addition, two response style subscales (Social Desirability and Denial) are included.

The Dyadic Relationships and Self-Rating Scales each yield seven subscale scores and a mean score. The FAM III Administration and Interpretation Guide (Skinner et al., 1984) provides normative data from a large sample of "normal" families. Normative data from various clinical families (over 2,000 individuals) also exist. Included in the clinical groups are families having a child with a major physical disorder (e.g., cystic fibrosis).

The FAM III is an innovative instrument in that it stresses the interface between the examination of the family system as a whole, and the examination of individual characteristics and interactions. It thereby provides an integration of several different approaches to the assessment of family functioning. It was developed according to a construct validation paradigm and has evolved from the revision of two earlier forms (FAM and FAM II). Upon administration to a sample of 475 families, FAM III demonstrated excellent internal consistency with alpha values ranging from .89 for the Self-Rating Scale to .95 for the Dyadic Relationships Scale. The median reliability for the subscales of the General Scale was .73. The median reliability was .72 for the subscales of the Dyadic Scale, and was .53 for the Self-Rating Scale. Intercorrelations among subscales ranged from .39 to .70 for the General Scale, from .63 to .82 on the Dyadic Scale, and from .23 to .63 on the Self-Rating Scale. The median correlations of subscales with social desirability were -.53, -.35, and

-.35 for the General, Dyadic, and Self-Rating Scales respectively. Similarly, the median correlations with defensiveness were -.48 (General Scale), -.28 (Dyadic Relationships Scale), and -.28 (Self-Rating Scale) (Skinner, Steinhauer, & Santa-Barbara, 1983).

In a sample of over 400 families the FAM III General Scale significantly differentiated between clinical (i.e., having one or more family members receiving professional help for psychiatric, drug, school, or legal problems) and nonclinical families, thus providing evidence for the diagnostic utility of the instrument. Other research studies are currently underway which further address the clinical utility of the FAM III.

For the purpose of the current research, FAM III served as a measure of the dependent variable of family Adaptation (see Table 4.1). The General, Dyadic Relationships, and Self-Rating Scales were all completed independently by both mothers and fathers. The Dyadic Relationships Scale was completed by each partner with respect to the marital dyad.

4.5 Data Analysis

There were four components to the analysis: (1) descriptive statistics on the questionnaire and test data, (2) comparisons of the test data with normative data, (3) correlations among the test measures and comparison of husband-wife correlations, and (4) development of regression models (using orthogonal predictors) to predict family adaptation (i.e., FAM III scores) from the measures of the pile-up, resources, and coping dimensions of the T-Double ABCX Model. The first three components of the analyses were accomplished with the SPSS-X statistical package (SPSS, 1988). The fourth component of the analysis was accomplished with a FORTRAN application program which used the singular value decomposition algorithm from the EISPACK library (Garbow, Boyle, Dongarra, & Moler, 1977).

In the first stage of the analysis the sample families are described in terms of demographic information obtained from the questionnaire and from the Bayley Scales of Infant Development. Means and standard deviations are reported on all other test variables (i.e., FAM III, PSI, LES, FIRM, SSI, and CHIP scales). Where applicable, these are presented separately for husbands and wives and the equality of means is evaluated for statistical significance.

In the second stage of the analysis the means obtained in the present study on the various tests are compared, where possible, with the normative data reported in the literature. The purpose of this analysis is to indicate the strengths and weaknesses of the current sample with respect to the normative samples.

In the third stage of the analysis the bivariate correlations among the test scores are examined. The correlations are reported separately for husbands and wives for subscale scores as well as for the summary scores. The statistical significance of the equality of the husband-wife correlations is evaluated with the independent sample test for equality of correlations given in Glass and Hopkins (1984).

Finally, in the fourth stage of the analysis, separate regression models for husbands and wives using orthogonal predictors were developed to evaluate the contribution to Family adaptation (i.e., mean FAM III scores) from the total scale scores on the PSI, LES, FIRM, SSI, PSUP, and CHIP measures. Orthogonalized predictor variables are used for the regression analyses in order to facilitate the univocal interpretation of each predictor-criterion relationship (Mulaik, 1972, pp. 404-409). This results from the fact that in the orthogonalization all of the predictor variables are simultaneously transformed so that they are uncorrelated but maximally related to the original set of scores using the criterion of least squares. This provides variables which are pure in that none of the orthogonalized predictor variables share any variance with any other variable in the predictor set and each orthogonalized predictor is maximally correlated with the associated untransformed variable. Consequently, the explanatory power of each predictor variable is the squared criterion correlation and the relative importance of each predictor variable can therefore be directly assessed. Also, the important variables in the regression equation are the variables that in their raw score orientation have the highest correlation with the criterion. This model is therefore conceptually clear. Such a procedure is ideally suited for model evaluation because the importance of each of the model dimensions (e.g., Coping) can be determined independently. In ordinary multiple regression it is difficult to assess the contribution of each of the predictor variables to the total predictable variance of the criterion. The regression result is highly dependent on the variables involved. In model evaluation it is often the case that investigators will use different measures of the same dimensions and/or will test different aspects of the model. The statistical and conceptual independence of the dimensions created by the orthogonalization procedure makes this much less of a problem in terms of replication.

CHAPTER V

RESULTS

5.1 Introduction

The results of the investigation are presented in this chapter. The sample of parents participating in the study and their children are described. Summary statistics (i.e., mean, range, standard deviation, and statistical significance, p) of the difference between mean scores for mothers and fathers are presented for each of the self-report measures. Where possible the results are compared with existing normative data.

Correlations among the scores on the six self-report measures and a number of demographic variables are also examined. Separate correlation matrices are presented for mothers and fathers and these are discussed. Relationships between variables which appeared to be consistent with what would be predicted by the T-Double ABCX Model of Adaptation are highlighted. In addition to the separate correlation matrices for the fathers and mothers, a third table is presented depicting the statistical significance (p) of the differences between the mothers' and fathers' correlations. Significant differences between the correlational patterns of the mothers' and fathers' scores are outlined.

Finally, regression equations are presented to predict the means of the FAM General, Dyadic, and Self-Rating Scales, separately for mothers and fathers. A full model is presented which includes the Pile-up, Resources, and Coping dimensions as predictors. In addition, three partial models are presented to predict the FAM means from the Pile-up, Resources, and Coping dimensions separately.

5.2 Sample Description

The parents and children who participated in the study are described in the following sections. Parents are described with respect to their age, level of education, occupation, income, and socioeconomic status of the family. The sex, age, birth order, number of siblings, and the type and severity of handicapping conditions are outlined for the child sample.

5.2.1 The Parents

Sixteen families having preschool children with mental and, in some cases, physical handicaps completed all aspects of the study. One additional family initially agreed to participate but subsequently did not complete several of the questionnaires. This family was excluded from the analyses because of excessive missing data.

The ages of the 16 mothers in the sample ranged from 25 to 38 years with a mean of 31.19 years and a standard deviation of 3.75 years. The ages of the 16 fathers ranged from 28 to 41 years with a mean of 33.5 years and a standard deviation of 4.35 years.

The level of education of the mothers ranged from less than high school matriculation (i.e., grade 10 or 11) to graduate professional training. Overall, however, the mothers were a highly educated group with 11 of the 16 mothers having some training at the college or university level. The level of education of the fathers was comparable to that of the mothers, again ranging from partial high school (i.e., grade 10 or 11) to graduate professional training, with 11 of the fathers having some training at the college or university level.

Six of the mothers were full-time homemakers. Of the mothers who did work outside of the home, 6 mothers worked part-time and 4 mothers worked full-time. Four of the working mothers had professional level occupations, and 5 mothers had technical or clerical jobs. The remaining mother was employed in a semi-skilled occupation. All of the fathers were employed full-time. Nine of the fathers had professional level jobs, 2 fathers held semi-professional or technical level jobs, and 5 fathers were employed in skilled or semi-skilled manual occupations.

The socioeconomic status scores (Hollingshead, 1975) for the 16 families ranged from 24 to 61 with a mean of 45.06 and a standard deviation of 12.5. Fifteen of the families' socioeconomic status scores fell within the middle to upper (middle range is 27-48) SES range. The average gross annual income of the families was $35-40 thousand, with a range of $20-25 thousand to more than $60 thousand.

In general, then, the sample of parents participating in the study were mature and well established. None of the parents were younger than 25 years of age and all of the primary income earners had stable employment. The majority of the parents were also well educated and financially secure.

5.2.2 Children

Nine of the children participating in the study were female and seven were male. One family had two children with special needs. The older child, however, did not meet the age criteria for selection. His demographic data, therefore, are not included here.

The children's chronological ages ranged from 31 months to 62 months with a mean of 44.31 months and a standard deviation of 7.26 months. With the exception of one child, the children's mental ages, as assessed by the Bayley Scales of Infant Development, ranged from 8 to 30 months. The oldest child in the sample was found to be functioning at a higher intellectual level than can be measured with the Bayley Scales (i.e., greater than 30 months). This child was subsequently assessed by an independent psychologist and was found to have a mental age of approximately 48 months. The mean mental age of the entire sample was 21.38 months with a standard deviation of 10.46 months.

In addition to their intellectual impairments, half of the children also had physical disabilities. The disabilities of eight of the children could be linked directly to gross neurological damage. For six of the children, the cause of their disorders was uncertain. The two remaining children had a clear genetic anomaly (i.e., Down syndrome). The actual diagnostic classifications of the children varied. Five of the children were classified as having global developmental delay. Two of the children had Cornelia de Lange syndrome, 2 children had Down syndrome, and 2 children were autistic. A further child had cerebral palsy, and 3 others had multiple handicaps/sensory deficits. The remaining child suffered from severe dyspraxia.

Seven of the children were first born. Six of the children were second born and 3 were third born. Two of the children in the sample had no siblings. Eight children had a single sibling. Five children had 2 siblings. One child had three siblings.

5.3 Summary Statistics on the Self-Report Measures

In the following sections the descriptive data (i.e., mean, range, and standard deviation) obtained from each of the six self-report measures, and presented in Tables 5.1 to 5.8, are discussed. Tables 5.1 to 5.8 correspond to the Parenting Stress Index, Life Experiences Survey, Family Inventory of Resources for Management, Social Support Inventory, Coping Health Inventory, and Family Assessment Measure III. The mean scores, where possible, are compared with existing normative data for each instrument. Where appropriate, significant mean differences (i.e., alpha = .05) between husbands and wives scores are addressed.

5.3.1 The Parenting Stress Index (PSI)

The ranges, means, and standard deviations of mothers' and fathers' scores on the Parenting Stress Index are presented in Table 5.1. According to Abidin (1986), the normal range for the total score on the Parenting Stress Index is 180-250 and parents who earn raw scores at or above 267 (i.e., at or above the 90th percentile) should be offered a referral for professional consultation. In the current sample of mothers, the mean total score on the Parenting Stress Index was 265.5 which falls just below the 90th percentile and, hence, very close to the guideline for professional referral. The range of scores from 199 to 351 suggests that some of the mothers in the study were experiencing extraordinary stress in parenting their special needs child. In fact, 7 of the 16 mothers achieved total stress scores between 271 and 351 with 5 mothers obtaining scores over 300 (i.e., well above the 99th percentile).

Total stress scores for fathers were generally somewhat lower, falling at the upper end of the normal range, with a mean of 240.56 and a percentile rank of just above 70. The difference between the husbands and wives total parenting stress scores approached, but did not reach, statistical significance (p = .132). Hence, although there was a trend towards fathers reporting less overall stress than mothers, which is consistent with some previous research (e.g., Kazak & Marvin, 1984), fathers were by no

Table 5.1

Range, Mean, Standard Deviation, and Statistical Significance (p) of Scores for Mothers and Fathers on the Parenting Stress Index (PSI)

Mothers/Fathers PSI Score	Range	Mean	Standard Deviation	p
PSI Total	199-351	265.50	51.97	
	171-305	240.56	37.71	.132
Child Domain Total	83-192	131.19	30.46	
	70-168	122.75	27.19	.415
Adaptability	20-44	30.25	6.84	
	17-42	29.00	7.39	.623
Acceptability	12-35	21.56	6.22	
	11-28	19.94	4.64	.409
Demandingness	13-39	25.75	7.01	
	17-35	24.38	6.22	.562
Mood	5-23	11.69	4.92	
	5-17	11.88	3.52	.902
Distractibility	15-41	29.75	7.64	
	18-37	27.44	5.02	.321
Reinforcement	6-21	12.19	4.86	
	6-22	11.44	5.56	.688
Parent Domain Total	99-215	134.31	32.77	
	88-158	117.81	17.58	.089
Depression	15-25	20.81	5.15	
	12-26	18.50	3.63	.154
Attachment	8-19	12.63	2.85	
	8-17	13.50	2.34	.350
Restriction	13-33	20.86	6.23	
	10-27	17.31	4.41	.074
Competence	20-37	30.38	4.94	
	21-37	29.13	4.33	.453
Isolation	6-20	12.06	3.96	
	8-18	12.44	3.14	.769

Table 5.1 Continued

Mothers/Fathers PSI Score	Range	Mean	Standard Deviation	p
Spouse	8-29	18.19	6.22	
	10-28	15.50	4.63	.177
Health	9-19	13.31	3.24	
	7-18	11.44	2.87	.094

Note. Statistical significance for mean difference was obtained from an independent sample 2-tailed t-test.

means immune to parenting stress. Four of the 16 fathers achieved total parenting stress scores between 279 and 305.

An examination of the Child Domain Total Scores and the Parent Domain Total Scores for husbands and wives provides some further insight into the origin and effect of the demands of raising a child with special needs on this sample of parents. According to Abidin (1986) high scores (i.e., 122 or higher) on the Child Domain Total suggest that particular qualities or behaviors of the child are major contributing factors to the overall stress in the parent-child system. High scores on the Parent Domain Total (i.e., 153 or higher), on the other hand, suggest that the sources of stress in the parent-child system may be related to aspects or dimensions of the parent's functioning. The Child Domain score, according to Abidin (1986) is usually elevated above the Parent Domain score for parents of children with handicaps suggesting, that despite significant child-related difficulties, many of the parents continue to function very well in their parenting roles. Abidin notes that in this group of parents, it is not uncommon for 5 of the 6 Child Domain subscales to be elevated above the 90th percentile.

In the current sample of mothers the mean of 131.19 for the Child Domain Total score fell above the 95th percentile indicating that, as a group, the mothers were reporting high levels of child related stress. Nine of the 16 mothers earned Child Domain Total scores falling above the 99th percentile. Of the six Child Domain subscales the mean scores for Acceptability, Demandingness, and Reinforcement were at the 90th percentile or higher. Mean scores for the Adaptability and Distractibility subscales were above the 85th percentile, and the mean score for the mothers on the Mood subscale fell at the 75th percentile.

The mean Parent Domain Total score of 134.31 for mothers fell between the 70th and 75th percentile and is considered to be within the nonclinical range (i.e., a high score is 153 or greater). This result is consistent with Abidin's finding that the Child Domain scores are generally elevated above the Parent Domain scores in families raising children with handicaps. The range of 99-215, however, indicates that some of the mothers were experiencing significant difficulties in their own functioning within the parent-child system. Five of the 16 mothers achieved Parent Domain Total scores above the 85th percentile. The mean scores for the mothers on each of the subscales of the Parent Domain (i.e., Depression, Attachment, Restriction of Role, Sense of Competence, Social Isolation, Relationship with Spouse, and Parent Health) all fell between the 50th and 75th percentiles. It should be noted, however, that on each of the subscales some mothers reported serious problems in their own functioning in that area (i.e., scores at or above the 90th percentile). Four mothers (i.e., one quarter of the sample), for example, reported serious difficulties in their spousal relationships and four mothers reported strong feelings of role restriction.

Within the father sample, the mean of the Child Domain Total was 122.75 which falls just above the 90th percentile and indicates that, as a group, the fathers, as well as the mothers, were reporting high levels of child related stress. There was no statistically significant difference between the mean total scores of fathers and mothers on the Child Domain (p = .45). Of the six Child Domain subscales the mean score for Acceptability fell above the 95th percentile and the mean score for Demandingness fell above the 90th percentile. Mean scores for the Adaptability and Reinforcement subscales fell at the 80th percentile, and mean scores for the Mood and Distractibility subscales fell just above the 75th percentile.

The mean Parent Domain Total score of 117.81 for the fathers fell at the 45th percentile. The mothers' and the fathers' mean Parent Domain Total scores fell within the normal range. The difference between the mothers' and fathers' mean scores approached but did not reach statistical significance (p = .089). There was a trend towards the fathers reporting fewer difficulties in their own functioning within the parent-child system than did the mothers. This may be related to the greater amount of time that the mothers are generally required to spend involved in parenting duties. Within the seven subscales of the Parent Domain, the mothers reported somewhat greater feelings of role restriction than did the fathers although the difference did not quite reach statistical significance (p = .074). This is consistent with some previous work (e.g., Mardiros, 1985; Schilling, Schinke, & Kirkham, 1985) which suggests that mothers are more limited in their capacity to hold a job outside the home or engage in other activities because of the need for full-time parenting of their handicapped child. There was a trend towards mothers reporting more health related concerns for themselves than did fathers although, again, this difference only approached statistical significance (p = .094). This perhaps might suggest that the stress of the greater care-taking demands on the mothers was being reflected in their physical well-being. The difference between mothers' and fathers' mean scores on the Depression and Spousal Relationship subscales also approached, but did not reach statistical significance (p = .154 and .177, respectively). There appeared to be a trend towards the mothers, as group, feeling somewhat more depressed, and less satisfied with their marital relationships than the fathers. Overall, then, while both fathers and mothers reported considerable child related stress, the mothers appeared to be experiencing significantly more difficulties in their own functioning within the parenting role than did fathers. This may be related to the mothers' generally greater involvement with the child on a day to day basis.

In summary, information obtained from the Parenting Stress Index indicated that many parents in the sample were experiencing high levels of stress in parenting their child with special needs. Mean total parenting stress scores fell near the 90th percentile for mothers and above the 70th percentile for the fathers. There was considerable variability around these mean total scores, however, and extremely high scores (i.e., over the 99th percentile) were achieved in individual cases. Consistent with Abidin's finding with parents of children having special needs, the Child Domain scores were higher than the Parent Domain scores. While the mean Child Domain scores for both mothers and fathers fell above the 90th percentile, mean Parent Domain scores for both parents fell within the nonclinical range. This suggests that, despite having to deal with numerous child related stressors, the stress was not invariably being manifested in the mothers' and fathers' own functioning within their parenting roles. This may be particularly true for the fathers whose mean Parent Domain Total score was considerably lower than the mean score of the mothers.

5.3.2 The Life Experiences Survey (LES)

The raw scores for the Life Experiences Survey were obtained by summing all of the positive ratings of events (i.e., LES Positive score), all of the negative ratings of events (i.e., LES Negative score), and all of the positive and negative (signs ignored) ratings together (i.e., LES Total score). The mean scores were then calculated from these raw scores. The ranges, means, and standard deviations of the LES scores for both the mothers and fathers in the current sample are presented in Table 5.2. The mothers' mean LES Total score of 15.56, representing the total amount of change, positive or negative, experienced in the preceding year, did not appear to be significantly different from the mean LES Total score of 12.35 which Sarason et al. (1978) reported for their sample of college females. Somewhat larger differences, however, may have been obscured by the fact that a 38 item version of the 47 item scale was used in the current investigation. Nine items were dropped from the original version for the purposes of this investigation because it was felt that they were too intrusive. The mean negative Life Experiences score of 7.06, representing the total amount of negative change, also did not appear to be significantly different from the mean LES Negative score of 5.64 reported by Sarason et al. (1978) for their college female sample. Again, however, it must be noted that a somewhat larger difference may be masked by the reduction of items in the current study. Finally, the mean Positive LES score of 8.50 for the mothers was only slightly higher than the mean reported by Sarason et al. of 5.81 for the college females (not taking into account the differing numbers of items administered). In general, however, within the current sample of mothers, there was more variability around the mean scores than there was around the mean scores for college females (i.e., standard deviations of 13.46 and

Table 5.2

Range, Mean, Standard Deviation, and Statistical Significance (p) of Scores for Mothers and Fathers on the Life Experiences Survey (LES)

Mothers/Fathers LES Score	Range	Mean	Standard Deviation	p
LES Total	2-53	15.56	13.46	
	0-30	12.19	8.64	.406
LES Negative	0-26	7.06	6.86	
	0-24	6.38	7.23	.784
LES Positive	0-47	8.50	11.32	
	0-19	5.81	5.64	.404

Note. Statistical significance for mean difference was obtained from an independent sample 2-tailed t-test.

8.82 for the Total LES scores of mothers and college students, respectively). While the mothers' mean LES scores suggest that, as a group, they did not experience significantly more life changes in the preceding year than would probably be average for mothers, in general, during the early years of child rearing, there were certainly some mothers in the sample who had experienced an extraordinarily high number of life changes (i.e., four mothers received LES Total Scores more than one standard deviation above the normative mean).

There were no major differences between the fathers and mothers on any of the Life Experiences scores. The fathers reported approximately the same number and degree of life changes as did the mothers. There were also no significant differences between the fathers' mean LES scores and those reported by Sarason et al. for their sample of college males (not taking into account the difference in number of items administered). The mean LES Total, LES Positive, and LES Negative scores for the college sample were 6.87, 4.66, and 11.53, respectively. Again, however, there were some fathers who had experienced a high number of life changes (i.e., three fathers received LES Total scores more than one standard deviation above the normative mean).

5.3.3 The Family Inventory of Resources for Management (FIRM)

Only one copy of the Family Inventory of Resources for

Management was completed per family. Mothers and fathers were requested to complete the inventory together identifying their personal, family system, and extended family social support resources. The FIRM was normed on 322 families having a child with either myelomeningocele or cerebral palsy. No norms are currently available for families not having a child with special needs.

The ranges, means, and standard deviations of the FIRM scores for the 16 families in the current investigation are presented in Table 5.3. The means and standard deviations are generally very consistent with those of the normative sample (McCubbin & Comeau, 1987). The mean FIRM Total score of 122.63 for the current sample was somewhat higher than the mean of 110 for the normative sample but remained within one standard deviation of the normative mean (i.e., the normative standard deviation was 18). The FIRM Total score is based upon the sum of all the subscales excluding the Sources of Financial Support and Social Desirability subscales. The higher Total FIRM score in the current sample was due, in part, to the somewhat higher mean score on the Financial Well-Being subscale than was obtained in the normative sample (i.e., 34.29 versus 29 for the normative sample). As mentioned previously, the families in the current investigation were, in the majority of cases, from relatively high socioeconomic backgrounds.

The Family Strengths I subscale taps family resources in six areas: family esteem, communication, mutual

Table 5.3

Range, Mean, and Standard Deviation of Scores on the Family Inventory of Resources for Management (FIRM)

FIRM Score	Range	Mean	Standard Deviation
FIRM Total	89-153	122.63	17.95
Family Strengths I: Esteem/Communication	33-43	38.44	3.12
Family Strengths II: Mastery/Health	23-54	40.13	10.37
Extended Family Social Support	5-12	9.69	2.09
Financial Well-Being	18-45	34.38	8.02
Sources of Financial Support	4-6	5.00	.63
Social Desirability	5-19	12.75	3.80

assistance, optimism, problem-solving ability, and autonomy. In the current sample the mean score was slightly higher than the normative mean (i.e., 38.44 versus 35 for the normative mean) and there was less variability around the mean (i.e., standard deviation of 3.12 versus 6 for the normative mean). The mean and standard deviation of the Family Strengths II subscale were virtually identical to the normative sample (i.e., 40.13 and 10.37 versus 39 and 9 for the normative sample). This subscale examines resources along three dimensions: sense of mastery over family events and outcomes, family mutuality, and physical and emotional health of members.

The mean and standard deviation of the Extended Family Social Support subscale, which taps the extended family support network, were also nearly identical to the normative values (i.e., 9.69 and 2.09 versus 9.00 and 2.00 for the normative sample).

The mean of the Sources of Financial Support subscale, which is not included in the FIRM Total score, was identical to that of the normative mean. There was, however, considerably less variability around the mean (i.e., standard deviation of .62 versus 3 for the normative sample).

Finally, the mean of the Social Desirability scale was virtually identical to the normative mean (i.e., 12.75 versus 12 for the normative mean). In the current sample, however, there was more variability around the mean (i.e., standard deviation of 3.80 versus 1.00 for the normative sample) indicating a greater proportion of very high and very low scores with respect to the influence of social desirability response bias in the current sample.

In summary, the families participating in the current investigation were, as a group, not appreciably different from the families in the normative sample of families raising a child with myelomeningocele or cerebral palsy with respect to the resources which they reported. Considering the vast difference in sample size, the profile of personal, family system, and social support resources reported by the current sample and the normative sample were surprisingly consistent. The families in the current investigation, as a group, did achieve a somewhat higher Total FIRM score but this appeared to be due, in large part, to the generally high socioeconom[illegible] status of the group.

5.3.4 The Social Support Inventory (SSI)

The Social Support Inventory was designed to assess the degree of emotional support perceived by parents as being available during any stage of parenting. It taps 5 types of affective support and 11 sources of support. The types of support are: emotional, esteem, appraisal, network, and altruistic. The sources of support include: spouse, children, relatives, friends, co-workers, community groups, church, spiritual faith, professionals and service providers, special groups (designed to help with specific problems or responsibilities), and books and television. The scale yields a support score for each of the 11 sources and a total support score. Unfortunately, very limited normative data on this instrument is available from the authors.

The ranges, means, standard deviations, and statistical significance (p) of the scores for mothers and fathers on the SSI are presented in Table 5.4. The minimum score obtainable for each source of support is 5 and the maximum is 15. The minimum SSI Total score is 60 and the maximum is 180. In view of the lack of available normative data, the discussion here focuses exclusively on the data obtained from the current sample and, in particular, the mother/father comparisons.

The mean SSI Total scores for both husbands and wives (i.e., 103.06 and 107.81, respectively) indicated that, as a group, the parents were experiencing a moderate amount of emotional support overall. There was no significant difference between the mothers and fathers in the total amount of affective support reported (p = .294).

The mean affective support scores for the within family sources (i.e., Spouse, Children, Relatives) were also not significantly different for the husbands and wives (p = 1.0, .810, and .274, respectively). Overall, both mothers and fathers reported a high level of support from their spouses. The mean spousal support score was 13.25 for both fathers and mothers. High mean scores for the Children

Table 5.4

Range, Mean, Standard Deviation, and Statistical Significance (p) of Scores for Mothers and Fathers on the Social Support Inventory (SSI)

Mothers/Fathers SSI Score	Range	Mean	Standard Deviation	p
SSI Total	90-135	107.81	12.70	
	83-126	103.06	12.48	.294
Spouse	9-15	13.25	2.30	
	6-15	13.25	2.67	1.000
Children	6-15	11.88	2.36	
	9-15	11.69	2.00	.810
Relatives	9-15	11.88	2.28	
	9-15	11.00	1.90	.247
Friends	9-15	12.25	1.98	
	5-13	10.00	2.19	.005
Co-workers	5-11	7.75	2.49	
	6-13	10.00	2.42	.015
Church/Synagogue	5-11	7.56	2.58	
	5-13	6.13	2.21	.102
Spiritual Beliefs	5-11	8.69	1.96	
	5-14	8.69	2.44	1.000
Community Groups	5-11	6.50	1.97	
	5-10	6.81	1.68	.633
Professionals	5-11	9.13	1.59	
	5-10	7.25	2.11	.008
Special Groups	5-11	7.56	2.31	
	5-10	7.25	2.38	.709
TV/Books	5-10	6.38	1.54	
	5-10	5.88	1.59	.373
Other	5-5	5.00	0.00	
	5-7	5.13	0.50	

Note. Statistical significance for mean difference was obtained from an independent sample 2-tailed t-test. A t-test was not performed for Other because the mother sample had no variance.

and Relatives sources for both mothers and fathers indicated that, on the whole, the parents perceived themselves as receiving sufficient emotional support from the nuclear and extended family networks.

Within the social network outside the extended family, the mothers, as a group, reported significantly more affective support from friends then did the fathers (p = .005). The mothers, in general, also reported significantly more support from professionals and other service providers than did the fathers (p = .008). This may reflect the mothers' generally greater involvement with this group. In many families, for example, it is likely to be the mothers who most often escort the child to medical appointments, and interact most frequently with the child's educators and other help providers. With respect to the support obtained through affiliation with a church or synagogue, the mothers, as a group, may have benefited somewhat more than did the fathers (p = .102). The fathers, on the other hand, reported significantly more support from co-workers than did the mothers (p = .015). This would be expected given that six of the mothers were full-time homemakers and only four of the mothers worked outside the home on a full-time basis. There were no significant differences between the mothers and fathers in the amount of emotional support they reported receiving from community or special groups, from their personal spiritual beliefs, or from books and television.

In summary, the parents, as a group reported obtaining moderate levels of emotional support overall. They reported experiencing high levels of support from their immediate and extended family networks. As would be expected, the parents generally reported receiving less affective support from the community network. The mothers, however, acknowledged significantly more support from their friends and church, as well as from the professionals with whom they interacted than did the fathers. The fathers, on the other hand, reported significantly more support from co-workers than did the mothers. Finally, it should be noted that, while the parents, as a group, reported moderate levels of emotional support overall, there were some parents who reported experiencing very low levels of emotional support. There were 4 mothers and 5 fathers in the sample whose SSI Total scores were less than 100 where the maximum total support score possible was 180.

5.3.5 The Coping Health Inventory for Parents (CHIP)

The Coping Health Inventory for Parents was designed to assess parents' perceptions of the coping behaviors they are currently employing to manage family life when they have a child with significant special needs. Each of the 45 items on the scale loads on one of three coping patterns. The CHIP was normed on 308 mothers and fathers raising a chronically ill child (McCubbin, 1987). The ranges, means, standard deviations, and statistical significance (p) of the CHIP scores for the mothers and fathers in the current sample are presented in Table 5.5.

Coping Pattern I focuses on parents' efforts to enhance family integration and cooperation, and to maintain an optimistic outlook on their situation. The mean score for the mothers on Coping Pattern I was not appreciably different from the mean score obtained from the normative sample of mothers (i.e., 35.5 versus 40.0 for the normative mean). As would be predicted, given the large difference in the size of the samples, there was less variability about the mean in the current sample than in the normative sample (i.e., standard deviations of 8.72 and 15, respectively).

The fathers' mean score on Coping Pattern I also did not appear to differ significantly from the normative mean for fathers (i.e., 33.31 versus 36.0 for the normative mean). Again, however, there was more variability in the normative sample relative to the current sample (i.e., standard deviations of 20.0 and 10.8, respectively). There was also no significant difference between the mean scores of the fathers and mothers in the current sample on Coping Pattern I (p = .522).

Coping Pattern II addresses parents' efforts to develop supportive social relationships, and to care for their own psychological and physical well-being. The mean score for the mothers on Coping Pattern II did not appear to be significantly different from the normative mean for mothers (i.e., mean scores of 30.56 and 28.0, respectively). As expected, more variability was evident in

Table 5.5

Range, Mean, Standard Deviation, and Statistical Significance (p) of Scores for Mothers and Fathers on the Coping Health Inventory for Parents (CHIP)

Mothers/Fathers CHIP Score	Range	Mean	Standard Deviation	p
Coping Pattern I:	15-47	35.50	8.72	
Integration/Optimism/ Cooperation	12-49	33.31	10.30	.522
Coping Pattern II:	17-47	30.56	8.82	
Support/Esteem/ Stability	7-45	26.13	10.07	.195
Coping Pattern III:	5-21	14.13	4.44	
Medical Understanding	2-17	10.31	4.51	.022
Total Score	50-108	80.19	17.26	
	25-102	69.75	21.41	.139

Note. Total Score is the sum of Coping Patterns I, II, and III. Statistical significance for mean difference was obtained from an independent sample 2-tailed t-test.

the normative sample of mothers relative to the current sample (i.e., standard deviations of 12.0 and 8.3, respectively).

The fathers' mean score on Coping Pattern II also did not differ appreciably from the normative mean for fathers (i.e., 26.13 versus 25.0 for the normative mean). The standard deviations for the experimental and normative samples were 10.07 and 15.0, respectively. Again, in the current sample, the difference between the mothers and fathers mean scores on Coping Pattern II did not reach statistical significance (p = .195).

Coping Pattern III addresses parents' efforts to acquire knowledge and understanding of their child's special needs through communication with health care professionals and other parents of chronically ill children, and to master any home care treatments which might be necessary. The mean score of the mothers on Coping Pattern III was not appreciably different from the normative mean score for mothers (i.e., mean scores of 14.13 and 15.0, respectively).

The fathers' mean score on Coping Pattern III was also not dramatically different from the normative mean for fathers (i.e., 10.31 versus 12.0 for the normative mean). The corresponding standard deviations were 4.51 and 8.0. There was, however, a significant difference between the mean scores of the mothers and fathers on Coping Pattern III (p = .022). The fathers in the sample generally reported engaging in fewer behaviors tapped by this pattern than did the mothers. This may reflect the fact that it is often the mothers who undertake the child's home care treatments, and who have the most contact with medical personnel and other parents.

In order to reduce the number of variables to be entered into the regression equations, a CHIP Total variable was generated for the purposes of this study by summing the scores on each of the three CHIP coping patterns (Bristol, 1987). Although the mothers' mean total coping scores were higher than the fathers' scores (i.e., 80.19 versus 69.75), this difference did not reach statistical significance (p = .139).

In summary, the coping patterns of the parents in the current investigation did not differ markedly from the coping patterns of the parents in the normative sample who were also raising children with special needs. With respect to Coping Patterns I and II the mean scores of the mothers in the current sample did not differ significantly from the mean scores of the fathers. Both fathers and mothers, in general, reported engaging in behaviors to enhance family integration, cooperation and optimism, as well as to develop supportive social relationships, and to care for their own physical and psychological health. The mothers' mean score on Coping Pattern III was significantly higher than the mean score of the fathers. The mothers, in general, reported undertaking a greater number of behaviors aimed at acquiring knowledge and understanding of their child's special needs, and at mastering required home care treatments. There was no significant difference between the fathers' and mothers' mean total scores on the CHIP.

Finally, it should be pointed out that there were several mother and father scores on each subscale of the CHIP that were more than one standard deviation below the normative means. With respect to the CHIP total scores there were three mothers and three fathers whose scores were more than one standard deviation below the respective sample means. Thus, despite generally average coping efforts by the group, some parents were experiencing serious coping difficulties in one or more areas relative to other parents raising children with significant special needs.

5.3.6 The Family Assessment Measure III (FAM-III)

As outlined in Chapter IV, the Family Assessment Measure III is a self-report instrument that provides quantitative indices of family strengths and weaknesses. The dimensions of family functioning assessed by FAM III which constitute the seven subscales include: task accomplishment, role performance, communication, affective expression, affective involvement, control, and values and norms. FAM III consists of three components: a General Scale which focuses on the family as a system, a Dyadic Relationships Scale which examines relationships between pairs (dyads) of family members, and a Self-Rating Scale which taps the individual's own perception of his/her functioning within the family. The seven dimensions of family functioning are thus examined from three perspectives to provide a comprehensive overview of the family system. Each of the three scales, therefore, yields seven subscale scores and a mean score. In addition, the General Scale includes two response style subscales (i.e., Social Desirability and Denial). The instrument was normed on a sample of 372 "nonclinical" families. Raw scores are converted to standard scores having a mean of 50 and a standard deviation of 10. The higher a standard score is above the mean, the poorer is the reported functioning in that area. According to Skinner et al. (1984) scores above 60 are likely to indicate disturbance in family functioning and, conversely, scores below 40 generally suggest very healthy functioning relative to the normative sample. The ranges, means, standard deviations, and statistical significance (p) of scores for the mothers and fathers in the current investigation are presented in Tables 5.6 to 5.8.

Without exception, the mean scores on the clinical subscales of the General Scale for both mothers and fathers fell within the range of healthy family functioning (i.e., between 40-60, see Table 5.6). In fact, the majority of the mean scores were less than 50. There were no significant differences in the mean scores of the fathers and mothers on any of the clinical subscales or on either of the

Table 5.6

Range, Mean, Standard Deviation, and Statistical Significance (p) of Scores for Mothers and Fathers on the Family Assessment Measure (FAM) III General Scale

Mothers/Fathers FAM General Score	Range	Mean	Standard Deviation	p
Values and Norms	29-73	44.81	10.44	
	29-64	47.94	9.77	.389
Control	31-87	49.50	13.32	
	26-56	47.25	7.42	.561
Affective Involvement	34-75	48.50	11.29	
	34-67	47.94	9.63	.881
Affective Expression	30-68	49.06	9.60	
	26-63	47.81	10.45	.728
Communication	35-88	49.25	12.00	
	26-73	46.69	11.56	.543
Role Performance	33-83	52.13	10.95	
	28-70	47.50	11.10	.245
Task Accomplishment	33-78	48.63	11.24	
	33-63	49.88	10.31	.745
Mean	33.57-78.86	48.84	10.25	
	28.86-61.50	47.85	8.67	.771
Defensiveness	16-65	42.81	11.47	
	19-58	44.06	10.25	.748
Social Desirability	25-63	48.63	11.19	
	39-63	51.19	8.23	.467

Note. Statistical significance for mean difference was obtained from an independent sample 2-tailed t-test.

Table 5.7

Range, Mean, Standard Deviation, and Statistical Significance (p) of Scores for Mothers and Fathers on the Family Assessment Measure (FAM) III Dyadic Scale

Mothers/Fathers FAM Dyadic Score	Range	Mean	Standard Deviation	p
Values and Norms	28-73	45.88	12.07	
	24-60	45.69	10.82	.963
Control	33-86	47.31	13.24	
	29-55	45.94	8.70	.731
Affective Involvement	32-83	46.81	13.35	
	32-58	46.63	9.15	.963
Affective Expression	28-69	46.00	11.86	
	23-64	50.06	8.83	.281
Communication	31-77	44.56	12.32	
	27-60	46.00	8.21	.701
Role Performance	35-34	49.44	11.91	
	35-63	48.31	7.79	.754
Task Accomplishment	30-77	46.19	12.35	
	30-54	45.50	8.25	.855
Mean	32.29-77.71	46.60	11.41	
	29.14-58.14	46.87	7.46	.936

Note. Statistical significance for mean difference was obtained from an independent sample 2-tailed t-test.

Table 5.8

Range, Mean, Standard Deviation, and Statistical Significance (p) of Scores for Mothers and Fathers on the Family Assessment Measure (FAM) III Self-Rating Scale

Mothers/Fathers FAM Self-Rating Score	Range	Mean	Standard Deviation	p
Values and Norms	27-65	44.44	10.05	
	27-65	47.44	9.65	.408
Control	38-59	46.94	8.14	
	22-69	48.63	9.08	.584
Affective Involvement	26-68	50.00	11.89	
	31-58	44.38	7.64	.124
Affective Expression	38-78	52.19	11.23	
	24-64	47.94	10.47	.277
Communication	26-62	45.25	10.29	
	31-72	47.31	10.53	.580
Role Performance	34-64	50.88	9.47	
	29-69	48.38	10.78	.491
Task Accomplishment	29-62	46.06	8.61	
	29-67	47.38	9.21	.680
Mean	36.71-59.71	47.96	7.40	
	28.29-54.71	47.35	7.22	.813

Note. Statistical significance for mean difference was obtained from an independent sample 2-tailed t-test.

response bias subscales. The mean scores on the Defensiveness subscale for both fathers and mothers fell within one standard deviation of the normative mean indicating that, as a group the parents fell within the average range with respect to their level of Defensiveness. The mean scores on the Social Desirability subscale for both the husbands and wives fell very close to the normative mean suggesting that, in general, the profiles were not distorted by social desirability bias.

An examination of the range of scores on each of the clinical subscales, however, indicates that there were some parents reporting significant difficulties in the various aspects of family functioning. For each of the clinical subscales there was at least one and, as many as 4 of the 16 mothers with scores over 60. Role performance within the family (i.e., agreement regarding role definitions, role integration, and ability of family members to adapt to new and changing roles) appeared to be one of the more troublesome areas for the mothers with 4 mothers having scores above 60 on this subscale. For the fathers, the area of role performance and task accomplishment (i.e., completion of basic tasks, task identification, generation of solutions, and implementation of change) within the family appeared to be the most problematic, with 3 of the fathers scoring over 60 on these dimensions. The area of affective involvement within the family also appeared to be viewed by fathers as a relatively greater concern with three of the fathers scoring 59 or higher on this dimension.

With respect to the ranges on the two response bias subscales, there again were parents at either extreme of the distribution. There was a single mother who scored above 60 on the Defensiveness subscale and 2 mothers scoring above 60 on the Social Desirability subscale. There were no fathers with scores above 60 on the Defensiveness subscale but there were 5 fathers (i.e., 31 percent of the sample) who scored above 60 on the Social Desirability subscale indicating a greater disposition on the part of the fathers to respond to items in the socially desirable direction. There were 4 mothers scoring below 40 on the Defensiveness Scale and 3 mothers scoring below 40 on the Social Desirability Scale. Low scores on these scales may be associated with high levels of anxiety and a tendency to exaggerate the problems in the family. In a clinical context this is generally viewed as an indirect request for help. There were 3 fathers scoring below 40 on the Defensiveness Scale and one father scoring more than one standard deviation below the mean on the Social Desirability Scale.

Overall, in responding to the General Scale the parents, as a group, reported good family functioning. The mean scores were very consistent with those of the normative sample of nonclinical families. There were, however, some parents who did acknowledge significant difficulties in the various areas of functioning tapped by this instrument. The results did not appear to be unduly affected by the Defensiveness response bias. A relatively high percentage of fathers (i.e., 31 percent), however, had elevated Social Desirability scores.

The ranges, means, standard deviations, and statistical significance (p) for the mothers' and fathers' scores on the Dyadic Relationship Scale are presented in Table 5.7. The mean scores on this scale generally fell below the normative mean of 50 indicating that, as a group, the parents reported being satisfied with their spousal relationships. There were no significant differences between the mothers' mean scores on the Dyadic Scale and the fathers' mean scores. An examination of the ranges, however, indicates that there were scores at either extreme of the distribution. The mothers' scores, in particular, showed considerable variability around the mean. Without exception, the standard deviations of the mothers' scores exceeded the normative standard deviation of 10. The highest mother score on each subscale was at least two standard deviations above the normative mean, and in some cases more than three standard deviations above the normative mean (i.e., over 80). On each subscale there were between one and four mothers reporting serious problems in that area with respect to husbands' performance. Role performance again appeared to be one of the more problematic aspects with four mothers reporting dissatisfaction with their spouses' functioning in this area.

The fathers' scores on the Dyadic subscale showed somewhat less variability than the mothers'. The standard deviations of the fathers' scores generally fell below the normative standard deviation of 10. The fathers' highest scores on each subscale were, without exception, lower than the mothers' highest scores. This may reflect a trend towards somewhat greater satisfaction with their marital relationships on the part of fathers, or may reflect the fathers' greater disposition towards responding in a socially desirable manner. The number of fathers with scores over 60 on the various subscales ranged from zero to two.

The ranges, means, standard deviations, and statistical significance (p) for the mothers' and fathers' scores on the Self-Rating Scale are presented in Table 5.8. The mean scores on this scale generally fell at or below the normative mean, indicating that, as a group, the parents reported being satisfied their own functioning within the family system. There were no significant differences between the mothers' mean scores on the Self-Rating scale and the fathers' mean scores. As on the Dyadic and General Scales, the ranges of the scores on the Self-Rating Scale were wide, with some parents reporting exceptionally good personal functioning within the family and others reporting serious problems. The number of mothers with scores over 60 on the various subscales ranged from 0 to 4. Four mothers reported significant personal difficulties in the area of affective expression (i.e., inadequate affective communication involving insufficient expression, and inhibition or overly intense emotions appropriate to the situation). The number of fathers reporting serious difficulties on each of the subscales ranged from 0-3. Again, the affective expression dimension appeared to cause the most difficulties with three of the fathers scoring over 60 on this subscale.

In summary, the parents, as a group, reported average family functioning on the Family Assessment Measure. There were no significant differences in any of the mean scores between the husbands and wives. The fathers, however, were somewhat more predisposed than the mothers to respond in a socially desirable manner. There were five fathers and two mothers with elevated scores on the Social Desirability index. Despite the normal level of family functioning reported by the majority of fathers and mothers, there were significant problems being reported by some of the parents on each of the clinical dimensions tapped by the General, Dyadic, and Self-Rating Scales. There were a number of families in the study who were clearly experiencing significant difficulties in some or all aspects of family functioning. In families experiencing problems, somewhat greater difficulties were noted in the areas of role performance, task accomplishment, affective involvement, and affective expression.

5.4 Integration and Overview of Summary Statistics on the Self-Report Measures

On the Parenting Stress Index there was evidence of considerable parenting stress within the current sample of mothers and fathers relative to the normative group of mothers who were raising healthy children. The mothers' mean Total PSI scores fell just below the 90th percentile while the fathers fell just below the 70th percentile relative to the normative group. An examination of the Parent Domain and the Child Domain scores, however, indicated that much of the stress was concentrated within the Child Domain. The Child Domain scores were elevated into the clinical range (i.e., above the 90th percentile) for both the mothers and fathers. This result was predictable. It would have been very surprising if these parents of moderately to severely handicapped children were not experiencing more child-related stress than were mothers raising healthy children. The mean scores on the Parent Domain, however, indicated that despite the high level of child-related stress, a majority of the mothers and fathers in the sample reported functioning very well in their parenting roles. Both the mothers' and fathers' mean Parent Domain scores fell within the normal range. The mothers' mean scores were somewhat higher than the fathers' mean scores although the difference failed to reach statistical significance ($p = .089$). The mothers, as a group, report greater feelings of role restriction and more health related concerns for themselves than did the fathers. Again, however, these differences did not quite reach statistical significance (p = .074 and .094, respectively). There was also a trend towards the mothers feeling somewhat more depressed and less satisfied with their marital relationships. This is consistent with previous research which has suggested that mothers of handicapped children experience more stress than do fathers, and may reflect the mothers' greater involvement in the parenting role.

Despite the apparently good functioning of the parents in their parenting roles, however, it should be noted that there was a considerable range in the Parenting Stress scores. Extremely high scores (i.e., well over the 99th percentile) were achieved in individual cases. This was a trend which appeared across all of the dimensions tapped in the study. While the mean scores on the various instruments fell within the average or nonclinical range, a fairly consistent number of extreme scores (i.e., generally in the range of 25 percent of the sample) revealed that some parents were experiencing serious difficulties.

The Life Experiences Survey, along with the PSI, served as a measure of the pile-up dimension of the T-Double ABCX Model. The mean LES scores suggested that, as a group, neither the mothers nor fathers had experienced significantly more life changes in the preceding year than would be expected for parents, in general, during the early years of child rearing. The range of scores for both mothers and fathers was quite wide, however. The mothers' total LES scores ranged from 2-53 and the fathers scores ranged from 0-30. Five of the parents in the study had experienced an extraordinarily high number of life changes (i.e., LES Total scores greater than one standard deviation above the normative mean).

Overall, then, with respect to the pile-up dimension of the T-Double ABCX Model of Family Adaptation, there were mothers and fathers in the current sample who apparently were facing a significant pile-up of stressors or demands. These demands were related to the special needs of the child as well as to other changes or events taking place within the family system.

The results of the Family Inventory of Resources for Management and the Social Support Inventory provided some insight into the personal, intrafamily, and social resources available to the parents for managing demands and stressors. Mean scores on the FIRM were generally very consistent with the mean scores of the normative sample of parents raising children with cerebral palsy or myelomeningocele. With one exception, the parents in the current sample did not appear to be significantly different from the parents in the normative sample with respect to the resources available. The parents in the current sample, as a group, reported a somewhat higher level of economic resources. Consistent, however, with the pile-up measure in the current investigation, there was a wide range in the FIRM Total scores (i.e., 89-153) with three of the families achieving scores more than one standard deviation below the normative mean indicating a low level of available resources relative to other parents raising handicapped children.

No normative data were available on the SSI. Based upon the minimum and maximum scores obtainable on this instrument, however, the parents, as a group, reported experiencing moderate levels of emotional support overall. Both mothers and fathers reported experiencing high levels of support from their immediate and extended family networks. As would be expected, they generally reported receiving less affective support from the community network. The mothers, however, acknowledged significantly more support from their friends as well as from professionals than did fathers. The fathers reported significantly more support from co-workers. Finally, while the parents, as a group, reported receiving moderate levels of support overall, there were some parents receiving low levels of emotional support. There were 4 mothers and 5 fathers in the sample whose SSI Total scores were less than 100 where the maximum support score was 180. Thus, while the majority of the parents reported having a moderate to high level of personal, intrafamily, and social resources available, there were some parents in the sample who apparently were experiencing a paucity of resources with which to deal with ongoing demands.

With respect to the coping dimension of the T-Double ABCX Model, the coping patterns of the parents in the current investigation did not differ markedly from the coping patterns of the parents in the normative sample who were raising chronically ill children. Both the fathers and mothers in the current sample reported engaging in behaviors to enhance family integration, cooperation, and optimism, as well as to develop supportive social relationships, and to care for their own psychological and physical health. The mothers, however, generally reported undertaking a greater number of behaviors aimed at acquiring knowledge and understanding of their child's special needs, and at mastering required home care treatments. Again, this may reflect the mothers' relatively greater involvement in the parenting role. Despite generally average coping efforts by the group relative to the normative sample of parents raising children with special needs, however, there were parents who obtained coping scores that were more than one standard deviation below the normative means indicating minimal use of CHIP coping patterns relative to other parents raising handicapped children.

The scores on the Family Assessment Measure provided some insight into the adaptation dimension of the T-Double ABCX Model. As a group, the parents reported good overall family functioning. The mean scores across all three scales of the FAM fell within the healthy family functioning range relative to the normative sample of nonclinical families. There were no significant differences in any of the mean scores between husbands and wives. Despite the healthy level of family functioning reported by the majority of fathers and mothers, however, there were significant problems being reported by some parents on each of the clinical dimensions tapped by the General, Dyadic, and Self-Rating Scales. There were some families (i.e., approximately 25 percent of the sample) who were clearly experiencing difficulties in some or all aspects of their family functioning. In families experiencing problems, somewhat greater difficulties were noted in the areas of role performance, task accomplishment, affective involvement, and affective expression.

In summary, results of the self-report measures suggested that the parents in the current investigation were generally experiencing significant levels of stress associated with characteristics or behaviors of their handicapped child's functioning. In spite of this high level of child-related stress, however, the parents, as a group, reported that they were managing satisfactorily in their parenting roles and that their overall family systems were functioning well. There was no evidence, in most cases, that excessive demands were depleting the parents' personal, intrafamily, or social resources. The majority of parents also appeared to be employing a variety of coping behaviors in their efforts to deal with the demands facing them. The generally positive picture presented above, however, was not uniformly true. On each of the self-report measures there were some parents reporting significant problems. The intercorrelations amongst the various self-report measures and the demographic variables (e.g., SES, parent education, degree of intellectual delay of the child) were, thus, examined to determine if there were any consistent relationships amongst the variables which might provide further insight into the roles of the stressor pile-up, resources, and coping efforts in determining family adaptation. The results of the correlational analyses are discussed in the following sections.

5.5 Correlations Among Self-Report and Demographic Variables

In the following sections the correlations among the scores on the six self-report measures, and a number of the demographic variables are discussed. For the sake of clarity, the intercorrelations within the various self-report measures are not addressed although they are presented in the tables. Variable labels are presented in Appendix I in Table AI.1. The demographic variables included were parental age, education, income, and socioeconomic status, as well as the age and birth order of the handicapped child. The extent of the child's intellectual delay was calculated by subtracting his/her mental age from his/her chronological age, and was also included as the primary index of the child's special needs. The presence or absence of physical impairment was employed as a further diagnostic variable, as was the existence of neurological impairment (i.e., present/absent/unknown). An additional support variable was also included in the correlational analyses. This was the amount of instrumental and emotional support parents reported obtaining from their child's Early Intervention or day care program and was determined from the structured interview form.

Separate correlational matrices were produced for mothers and fathers. In view of the small sample size relative to the number of variables, only those correlations significant at an alpha level of .01 were considered in most cases. Correlations at the .05 level of significance were interpreted if they appeared to be consistent with existing trends (e.g., additional subtest correlations with a particular variable were significant at the .10 level where other subtests on the same instrument were significant with that variable at the .01 or .05 alpha levels). While it was recognized that given the sample size, correlations significant at less than the .01 level must be viewed with caution, a somewhat less stringent approach was taken here in view of the exploratory nature of the study. In addition to the separate correlation matrices for the fathers and mothers, a third table was produced depicting the statistical significance (p) of the differences between the mothers' and fathers' correlations. This was conducted to determine if, despite relatively few differences in the mothers' and fathers' mean scores, there were significant differences in the correlational patterns of the parents.

5.5.1 Mother Intercorrelational Trends

The correlation matrix for the mothers is presented in Table AI.2 in Appendix I. Descriptions of the variable abbreviations employed in Table AI.2 are presented in Table AI.1 in Appendix I.

With respect to the demographic variables some significant correlations did occur. In view of the small sample size and the limited variability on some of the demographic variables, however, little effort has been made to interpret these correlations within a broader context. Maternal age was positively correlated with the Child Domain scores of the PSI. Generally, the older the mother in the sample, the more child-related stress she reported. Maternal age was also strongly correlated with the absence of physical disabilities in the child. That is, the older mothers in the sample tended to have children who had intellectual but no physical disabilities.

As might be expected, maternal educational level was positively correlated with family socioeconomic status at the .05 alpha level. Maternal educational level was also positively correlated with the PSI Acceptability subscale at the .01 alpha level and with the Child Domain Total at the .05 alpha level. In general, the higher the mother's educational level, the more child-related stress she reported, particularly in the area of child acceptability. Higher maternal education was also associated with generally better overall family functioning as reported on the FAM Scales. The majority of the FAM scores, including the mean of the FAM General Scale, were significantly negatively correlated with maternal educational level.

The age of the handicapped child was associated with generally greater coping efforts on the part of the mothers (i.e., positive correlation with CHIP Total Score and Coping Pattern I: Integration/Cooperation/Optimism), as well as with mothers' reports of greater support from the child's Early Intervention or day care program ($p = .05$). Later birth order of the child, however, was generally associated with greater parenting stress on the part of the mother especially in the parent domain (i.e., birth order was positively correlated with PSI Total score, and Parent Domain Total and subscale scores). The birth order of the handicapped child was also negatively correlated ($p = .05$) with the Mastery and Health subscale of the FIRM, as well as with the FIRM Total scores ($p = .10$). The later the child was born, the fewer resources identified by the mothers, especially with respect to their ability to control family events and outcomes, and with respect to their own health. Somewhat consistent with this was a positive correlation between birth order and the scores on the Control subscale of the Self Rating Scale on the FAM (p = .10). Again, there was some indication that the later the child was born, the less control the mothers in the sample felt over family events. Finally, there was a significant positive relationship (p = .01) between birth order and the amount of support mothers reported receiving from their church or synagogue, and from community groups (p = .10).

In keeping with the dimensions of the T-Double ABCX Model, significant correlational trends with the Pile-Up dimension variables (i.e., PSI and LES Scales) are discussed next. This is followed by a discussion of the correlational trends with the Resources (i.e., FIRM and SSI Scales, Program Support Total), Coping (i.e., CHIP Scales), and Adaptation (i.e., FAM III Scales) dimensions.

The total score on the Life Experiences Survey was positively correlated with all of the PSI Parent Domain scores. In general the higher their LES scores, the more the mothers reported having feelings of depression, role restriction and social isolation, as well as having greater health related concerns, poorer relationships with their spouses, and less confidence in their own parenting skills (i.e., overall stress in the parent domain). Total LES scores were negatively correlated with the FIRM Total scores, as well as with the FIRM Mastery/Health, and Financial Well Being subscales. In general, the more life changes the mothers reported experiencing in the preceding year, the fewer resources they acknowledged having, particularly with respect to financial resources, physical resources, and feelings of mastery over family events and outcomes. Higher LES total scores were also associated with greater reported problems in overall family functioning. That is, LES total scores were positively correlated with the mean of the FAM General Scale as well as with most of the other FAM clinical scores. Also, the more life changes the mothers reported experiencing, the more support they reported receiving from their children's Early Intervention or day care programs, and from community and other special groups. Finally, the mothers' LES total scores were positively correlated with the CHIP total score, as well as with the scores on Coping Patterns II and III. That is, the greater the number and/or severity of life events the mothers reported, the greater their efforts to develop supportive social relationships, to care for their own psychological and physical well-being, and to acquire knowledge of their children's special needs through involvement with professionals and other parents of handicapped children.

In summary, maternal reports of a greater number and/or severity of life changes in the preceding year were generally associated with greater maternal stress, depletion of family resources, and poorer overall family functioning. LES total scores were also associated with maternal reports of greater involvement with, and support from, the child's educational program, other professionals, other parents, and community and special groups. This may reflect maternal coping efforts to seek out such external sources of support in light of high demands and decreased intrafamily resources.

The LES Negative scores reflect negative changes or events exclusively. Correlational patterns with maternal LES Negative scores were not appreciably different from the correlational patterns of the LES Total scores. Higher LES Negative scores were also associated with greater maternal stress, fewer family resources, and poorer overall family functioning, as well as with greater involvement with external sources of support. The relationship between LES Negative scores and FAM clinical scores, however, was extremely strong (i.e., most FAM clinical scales positively correlated with LES Negative scores at the .01 alpha level). This would suggest that negative life events were particularly strongly associated with difficulties in many aspects of family functioning.

Higher LES Positive scores were also associated with maternal stress, depletion in family resources, increased maternal coping efforts, and maternal reports of greater involvement with educational programs and community groups. There was, however, no significant association between LES Positive scores and FAM scores. This would suggest that, while positive events might result in additional demands requiring greater coping efforts, and potentially resulting in increased maternal stress and a strain on family resources, they were not associated with the same degree of family dysfunction as were negative events.

The Parenting Stress Index served as an additional self-report measure of the Pile-Up dimension. With respect to the PSI Total scores, the greater the total amount of parenting stress reported by the mothers, the fewer the family resources identified (i.e., PSI Total scores were negatively correlated with FIRM Total scores). PSI Total scores were also negatively correlated with SSI spouse scores and positively correlated with SSI Church/Synagogue and SSI Professionals scores. In other words, mothers who reported high levels of overall parenting stress also generally reported receiving less emotional support from their husbands, and more support from their church and from professionals. Somewhat consistent with the negative correlation between the PSI Total score and the SSI Spouse scores, was a positive correlation between the PSI Total scores and the Affective Expression subscale of the FAM General Scale ($p = .10$). Mothers reporting high levels of parenting stress were generally less satisfied with the level of affective expression in the family.

Child Domain Total scores were also negatively correlated with SSI Spouse scores, as well as with the SSI Relatives, and SSI Children scores. The higher the mothers' child-related stress the less affective support they generally reported receiving from their husbands, children, and other relatives. In addition, the Child Domain Total scores were negatively correlated with the FIRM subscale scores on the Mastery/Health and Esteem/Communication dimensions (p = .10). Generally, the greater the child-related stress reported by the mothers, the fewer personal and intrafamily resources identified. Positive correlations between the Child Domain Total scores and the Affective Expression and Task Accomplishment dimensions of the FAM Self Rating Scale (p = .10) also suggested that the greater the child-related stress reported, the less happy the mothers tended to be with their own affective expression and task accomplishment within the family.

For the sake of brevity, the correlations with the various subscales of the PSI Child Domain are not discussed individually. Generally, high scores on the Child Domain subscales were associated with maternal reports of less affective support from their husbands, children, and relatives; fewer available personal and intrafamily resources; less satisfaction with their own affective expression and task accomplishment within the family; and fewer coping behaviors aimed at maintaining family integration, cooperation, and optimism.

Parent Domain Total Scores were negatively correlated with FIRM Total scores and with scores on the Mastery/Health subscale of the FIRM. Generally, higher levels of maternal stress were associated with reports of fewer available personal, intrafamily, and extended family resources. As might be predicted, depletion of the personal resources of physical well being, and feelings of mastery over family events and outcomes were particularly strongly associated with reports of poorer personal functioning by mothers within their parenting roles.

The majority of the correlations with the subscales of the Parent Domain were consistent with what might be predicted and, because of the insight they provide on maternal functioning within the parenting role, are highlighted here. The greater the mothers' feelings of role restriction, the lower the family resources scores, especially with respect to the Mastery/Health and Financial Well-Being dimensions. Reports of less affective support from their husbands were also associated with mothers' feelings of greater role restriction. Scores on the PSI Role Restriction subscale were also negatively correlated with a number of the FAM subscales including the mean of the General Scale, the Task Accomplishment subscale of the General Scale, and the Control, Affective Expression, and Role Performance subscales of the Dyadic Scale. In other words, mothers' feelings of role restriction were associated with poorer family functioning, generally, and dissatisfaction with their spouses' performance in the areas of control, affective expression, and role performance, specifically. As might be predicted, maternal feelings of social isolation (i.e., high scores on the Social Isolation subscale) were associated with reports of fewer family resources; poorer family functioning (especially in the areas of affective expression, task accomplishment, and role performance); less affective support from spouse and other relatives; and lower scores on the CHIP I coping pattern of maintaining family integration, cooperation, and optimism. Scores on the Spousal Relationship subscale of the PSI were negatively correlated with FIRM scores and SSI Spouse scores. They were positively correlated with the majority of the FAM scores and the CHIP III coping pattern. Generally, the poorer the mother reported her relationship with her spouse to be, the less affective support she reported receiving from him; the poorer she described the overall family functioning; the less available resources she identified; and the more involvement she reported with professionals and other parents of handicapped children in understanding and managing her child's medical problems. Reports of maternal health problems and maternal depression (i.e., Parent Health and Depression subscales of the PSI) were also associated with fewer personal and intrafamily resources, as well as perceptions of greater support from external sources of support such as professionals, community groups, and the church. Finally, scores on the PSI Sense of Competence subscale were positively correlated with CHIP scores and the SSI Special Groups and Program Support scores. They were also positively correlated with the scores on the Role Performance subscale of the FAM Self Rating Scale. In other words, the poorer the mother's sense of competence with respect to her parenting role, the greater her coping efforts, the more support she obtained from her child's educational program and from other special groups, and the poorer she viewed her own role performance within the family.

In summary, high levels of parenting stress reported by the mothers were generally associated with fewer available personal and intrafamily resources. This was consistent with the correlational trends found for the Life Experiences Survey. High demands, whether related to parenting the handicapped child specifically, or to other changes occurring in the family generally, appeared to be associated with a lack or depletion of personal and intrafamily resources. With respect to intrafamily resources, perceived lack of affective support from their spouses was strongly associated with high levels of parenting stress. As in the case of the LES scores, there again appeared to be a trend towards the mothers reporting greater support from external sources (i.e., professionals, special groups, church) in the face of fewer personal and intrafamily resources and support. High levels of parenting stress were also associated with some reported difficulties in overall family functioning. Role performance, task accomplishment, and affective expression appeared to be the most vulnerable areas. It is not surprising that when the number of demands are high, families would have difficulties in the areas of task accomplishment and role performance. Finally, it was interesting to note that none of the variables associated with the severity of the child's handicapping condition (e.g., extent of intellectual delay) were correlated with any of the Parenting Stress scores.

Scores on the Family Inventory of Resources for Management Scale and the Social Support Inventory, as well as the Program Support score, served as indices of the Resources dimension of the T-Double ABCX Model of Adaptation. Some additional correlations with these dimensions are highlighted next.

The FIRM Total scores were negatively correlated with the majority of the FAM clinical scales including the mean of the FAM General Scale. Scores on the Role Performance, Task Accomplishment, and Affective Expression subscales of the General Scale were also particularly highly correlated with the FIRM Total scores. Generally, greater family resources were associated with reports of better family functioning, particularly in the areas of task accomplishment, role performance, and affective expression. FIRM total scores were also positively correlated with SSI spouse scores, again reflecting the importance of spousal support as an important intrafamily resource. Finally, FIRM total scores were negatively correlated with the SSI Professionals score and the CHIP III Coping Pattern: Medical Understanding, probably again reflecting a lesser need for support from professionals and other parents of handicapped children (i.e., external sources of support) when personal, intrafamily, and extended family resources are adequate. Correlational patterns with the FIRM subscales were generally similar to those of the FIRM total scores. Generally, the higher the FIRM subscale scores, the better the overall family functioning, the more affective support the mothers reported receiving from their spouses, and the less support they reported receiving from professionals and other sources of external support. In addition, the FIRM Extended Family Social Support scores were negatively correlated with the scores on the Role Performance subscale of the FAM Self-Rating Scale, suggesting that mothers' receiving adequate levels of social support from extended family members tended to be more satisfied with their own role performance within the family. This trend was also noted upon examination of the correlational trends associated with the Social Support Inventory.

SSI Total scores and scores on the SSI Relatives and Friends subscales were negatively correlated with scores on the Task Accomplishment, Role Performance, and Affective Expression subscales of the FAM Self-Rating Scale. This would again suggest that mothers reporting higher levels of social support generally appeared to be more satisfied with their own functioning within the family. SSI Total scores were also positively correlated with total scores on the CHIP. In general, higher levels of social support were associated with overall greater coping efforts on the part of the mothers. Scores on the SSI subscales of Spiritual Faith, Community groups, and Special Groups were also positively correlated with CHIP Total Scores. SSI Spouse scores were negatively correlated with the majority of the FAM clinical subscales, including the mean scores of the FAM General Scale, again emphasizing the importance of spousal emotional support in determining mothers' overall perceptions of family functioning.

The Program Support score was the final variable associated with the Resources Dimension of the T-Double ABCX Model. The Program Support scores were positively correlated with the majority of the FAM clinical scales. Mothers' reports of more support from their children's educational programs were associated with generally poorer family functioning.

All significant correlations with the Coping and Adaptation dimensions of the T-Double ABCX Model (i.e., CHIP and FAM III) have already been addressed and require no further explication here.

To summarize, the maternal correlation trends appeared to be quite consistent with what might be predicted from the T-Double ABCX Model. Scores on two of the self-report measures of the Pile-up dimension (i.e., PSI and LES) were negatively correlated with scores on the FIRM suggesting that a pile-up of stressors or demands was associated with a lack or depletion of personal, intrafamily, and extended family resources. There was no relationship, however, between the pile-up measure of severity of handicap and other resource, coping, or family functioning variables. There existed a strong negative relationship between parenting stress scores and SSI Spouse scores suggesting that affective support from their husbands was crucial to the mothers functioning well in their parenting roles. Positive correlations between the LES scores and the Parent Domain Total scores may also suggest that a high number of demands facing the mothers, in addition to those associated directly with the special needs of the child, may also be reflected in their personal well-being and functioning within their parenting roles. In addition, LES Negative scores were negatively correlated with FAM scores suggesting that changes and events taking place in the family which were perceived by the mothers as being negative were associated with problems in overall family functioning, as well. Also associated with a greater number of events or changes occurring within the family were mothers' reports of greater coping efforts directed toward developing supportive social relationships, caring for their own psychological and physical health, and acquiring knowledge of their child's special needs. This may suggest that as the demands facing the mothers increased, more behaviors aimed at dealing with these demands were required. Both LES Total scores and PSI Total scores were positively correlated with SSI Professionals, SSI Community

Groups, and SSI Special Groups suggesting that one of the coping strategies employed by the mothers might be to seek out external sources of support when personal and intrafamily resources were lacking or depleted. Overall, then, a pile-up of demands appeared to be associated with a lack or depletion of family resources, maternal stress, some difficulties in various aspects of family functioning, some increased coping efforts, and, finally, reports of greater support by external sources by mothers.

A strong negative relationship also existed between FIRM scores and FAM scores suggesting that a lack or depletion of personal, intrafamily, and extended family resources was, in turn, strongly associated with difficulties in overall family functioning. Higher SSI Total scores were also generally associated with greater maternal coping efforts, less maternal stress as reflected in the Parent Domain scores, and mothers' more positive perception of their own functioning in the family as reflected in the FAM Self-Rating scores.

Overall, as would be predicted by the T-Double ABCX Model, the Pile-Up, Resources, and Coping dimensions appeared to play important roles in the adaptive functioning of this sample of mothers and their families.

5.5.2 Father Intercorrelational Trends

The correlation matrix for the fathers is presented in Appendix I in Table AI.3. Descriptions of the variable abbreviations employed in Table AI.3 are presented in Table

AI.1 in Appendix I.

With respect to the demographic variables some significant correlations did occur. As in the case of the mother sample, however, little effort has been made to interpret these correlations within a broader context. Paternal age was positively correlated with the Child Domain scores of the PSI. Paternal age was also negatively correlated with scores on the CHIP II Coping Pattern of Support/Esteem/Stability, negatively correlated with LES Positive scores, and positively correlated with SSI Professionals and SSI Church scores. There existed a positive correlation between paternal age and mean scores on the FAM Self-Rating Scale and scores on the Affective Expression subscale of the General Scale. In general, then, older fathers in the sample appeared to be experiencing more child-related stress, to be less satisfied with their own functioning within the family, to have experienced fewer events or changes perceived as positive, and to be receiving greater support from professionals and the church.

As would be expected, paternal educational level was positively correlated with family socioeconomic status and with the Financial Well-Being subscale of the FIRM. Paternal educational level, however, was negatively correlated with the CHIP II Coping Pattern of Maintaining Support/Esteem/Stability as well as with CHIP Total scores. The higher the fathers' educational levels, generally the poorer their coping efforts, particularly with respect to taking care of themselves and their own needs. Finally, paternal educational level was positively correlated with the Social Isolation subscale of the PSI. Better educated fathers in the sample tended to report experiencing greater feelings of social isolation.

There were no significant correlations with the Child Age variable at the .01 alpha level. Examination of the correlations at the .05 and .10 alpha levels revealed some association between child age and problems in the marital dyad as indicated by positive correlations between child age and scores on the Dyadic-Relationships Scale of the FAM. Consistent with the mother sample data, a positive correlation also existed between child age and the amount of support fathers reported receiving from their child's educational program.

There were no significant correlations with the Birth Order variable at the .01 alpha level. Examination of the correlations at the .05 and .10 alpha levels, however, revealed an association between birth order and child-related stress as reported on the PSI. The later the child was born, the more stressful the father generally rated the child to be. Birth order and parenting stress were also positively correlated for mothers. Also consistent with the data from the mother sample was a negative correlation between the birth order of the child and FIRM Mastery/health and Total scores. The later the child was born the fewer resources identified by the fathers, especially with respect to their ability to control family events and outcomes, and with respect to their own health. The later birth order of the child was also generally associated with problems in some areas of family functioning including the dyadic relationship, fathers' personal involvement in the family, and family task accomplishment.

Finally, with respect to the severity of the child's handicapping condition, there was a positive correlation between the extent of intellectual delay and the Child Domain Total on the PSI. Generally, the greater the child's intellectual delay, the more child-related stress reported by the father. This finding was not consistent with that of the mother sample. There was no significant relationship between the extent of intellectual delay of the child and maternal parenting stress scores. Greater intellectual delay in the child was also associated with paternal reports of greater use of CHIP Coping Pattern III: Medical Understanding. This might reflect some predisposition for the fathers to be more involved with the medical community when the child's disability was more severe. Finally, some association also existed between the degree of intellectual delay and fathers' dissatisfaction with mothers' task accomplishment within the family. This was indicated by a significant positive correlation (i.e., p = .10) between the intellectual delay variable and scores on the Task

Accomplishment subscale of the Dyadic-Relationships Scale of the FAM. This might be predictable if a more severe handicap placed more demands on the mother and left her less time to undertake other tasks which husbands felt were important.

In keeping with the dimensions of the T-Double ABCX Model, significant correlational trends with the Pile-Up dimension variables (i.e., PSI and LES Scales) are discussed next. This is followed by a discussion of the correlational trends with the Resources (i.e., FIRM, SSI, and Program Support Total), Coping (i.e., CHIP Scales), and Adaptation (i.e., FAM III Scales) dimensions.

As in the case of the mothers, higher LES Total scores were associated with higher paternal scores on the Parent Domain subscales of the PSI. Generally, the more events or changes reported by the fathers as taking place in the preceding year, the more problems they reported in their own functioning within their parenting roles. Higher LES total scores were also associated with lower SSI Total scores, as well as with lower SSI Co-workers, SSI Professionals, SSI friends, SSI Community groups, and SSI Books/Television scores. Generally, the greater the demands emanating from life events and changes, the lower the affective support acknowledged by the fathers, especially from external sources. This was somewhat different from the correlational trends of the mother sample. Mothers tended to report receiving more social support from external sources when demands resulting from life changes or events were greater.

LES Negative scores were positively correlated with Parent Domain scores on the PSI and with scores on the FAM General Scale. They were negatively correlated with FIRM total scores, SSI Total scores, and CHIP Total scores. In general, the greater the number and/or severity of life events or changes reported by the fathers, the greater the stress they reported experiencing, and the poorer was the reported overall family functioning. A greater number or severity of negative life experiences were also associated with fewer personal, intrafamily, and extended family resources, as well as with fathers' perceptions of less available affective support. A significant (p = .10) negative correlation also did exist between LES negative scores and CHIP Total and Coping Pattern I scores. This would suggest that when the number or severity of negative life events was higher, fathers tended to report engaging in fewer of the coping behaviors tapped by the CHIP. This finding was contrary to that of the mother sample. Mothers generally reported engaging in more of the CHIP coping behavior when demands from life events and changes were higher.

Higher LES Positive scores were associated with lower perceived support from professionals, specifically, and lower perceived support overall. Higher LES Positive scores were also associated with less child-related stress as assessed by the Child Domain Total Scores on the PSI. LES Positive scores were also positively correlated (p = .05) with scores on the Depression subscale of the PSI. These correlations with the LES Positive variable are not easily interpreted and differed quite substantially from those of the mother sample.

The Parenting Stress Index served as an additional self-report measure of the Pile-Up dimension. With respect to the PSI Total scores, the greater the amount of parenting stress reported by the fathers, the fewer the family resources identified, especially with respect to their ability to control family events and outcomes and with respect to their own health (i.e., PSI Total scores were negatively correlated with FIRM Total scores and FIRM Mastery/Health subscale scores). PSI Total scores were also positively correlated with scores on a number of the clinical subscales of the FAM including the mean of the FAM General Scale. High levels of parenting stress were associated with fathers' reports of more problems in family functioning. Higher levels of parenting stress were also associated with less perceived support from spouses and friends (i.e., PSI Total scores negatively correlated with SSI spouse and SSI Friends scores), and with greater perceived support from special groups (i.e., PSI Total scores positively correlated with SSI Special Groups score). Finally, PSI Total scores were negatively correlated (p = .10) with CHIP Total, CHIP I and CHIP II scores, suggesting that high levels of parenting stress may be associated with poorer coping efforts on the part of the fathers.

Child Domain Total scores were positively correlated with SSI Special Groups, SSI Community Groups, and SSI Professionals scores perhaps reflecting the fathers' greater tendency to be involved with professionals and other formal sources of support when child-related stress was higher. In addition, the Child domain Total scores were negatively correlated with the FIRM Total scores and the FIRM Mastery/Health subscale scores. Generally, the greater the child-related stress reported by the fathers, the fewer intrafamily and personal resources identified. Positive correlations existed between the Child Domain Total score and the Task Accomplishment and Control subscale scores on the FAM Dyadic Relationships Scales as well as between the Child Domain Total Scores and the Role Performance subscale scores on the FAM Self-Rating Scale. This suggests that some problems in family functioning may be associated with higher levels of child related stress. As in the mother sample, the areas of task accomplishment and role performance appeared to be particularly vulnerable areas.

Correlations with the various subscales of the Child Domain are not discussed individually. Overall, they were generally consistent with those of the Child Domain Total scores. Generally, high scores on the Child Domain subscales were associated with paternal reports of fewer personal and intrafamily resources, greater problems in some aspects of family functioning, and more support from community and special groups. Paternal reports of fewer coping behaviors aimed at maintaining family integration, cooperation and optimism, and at maintaining their own state of psychological well-being were also associated with higher scores on a number of the Child Domain subscales.

Parent Domain Total Scores were negatively correlated with SSI Total scores as well as with scores on the Spouse, Friends, Relatives, Co-workers, and Professionals dimensions of the SSI. Paternal stress appeared to be associated with fathers experiencing a lack of emotional support. Interestingly, Parent Domain Total scores were positively correlated with SSI Special Groups scores, possibly suggesting that when fathers are experiencing high levels of stress in parenting their handicapped child, special groups (e.g., parent support groups) may be particularly helpful. In addition, higher Parent Domain Total scores were associated with reports by fathers of generally poorer family functioning. Positive correlations existed with the mean scores of the FAM General Scale and with scores on many of the other FAM clinical subscales. Finally, significant negative correlations occurred between the Parent Domain Total scores and CHIP Total and Coping Pattern I scores. Fathers experiencing higher levels of personal stress with respect to their parenting roles, also tended to report engaging in fewer of the CHIP Coping behaviors, particularly those aimed at fostering family integration, cooperation, and an optimistic view of the situation.

Correlations with the various subscales of the Parent Domain were very consistent with those of the Parent Domain Total scores. Generally, high scores on the various subscales were associated with lower scores on the SSI indicating less perceived emotional support when paternal stress was higher. SSI Special Groups scores and the Program Support Total scores were notable exceptions to this trend. These scores were positively correlated with a number of the Parent Domain subscale scores suggesting that special groups such as parent support groups and the child's educational program were valuable sources of support when paternal stress was high. Higher scores on the Parent Domain subscales were also generally associated with higher FAM scores (i.e., poorer family functioning), and lower CHIP scores (i.e., poorer coping efforts).

In summary, a pile-up of demands resulting from either the special needs of the child or from other events or changes appeared to be associated with paternal stress as indicated by the Parent Domain scores on the PSI, a lack or depletion of personal, intrafamily and extended family resources, and disruptions in overall family functioning. These correlational trends were generally consistent with those of the mother sample. Fewer paternal coping behaviors, and fathers' perceptions of a lack of emotional support were also associated with a pile-up of demands. Relative to the mother sample, fathers appeared to feel less emotionally supported when demands were high, particularly from sources such as friends, relatives, and co-workers. The relationship of fathers' coping efforts to the pile-up dimension also appeared to differ somewhat from that of the mother sample. These differences are explored more fully in Section 5.5.3.

Scores on the Family Inventory of Resources for Management Scale and the Social Support Inventory, as well as the Program Support score served as indices of the Resources dimension of the T-Double ABCX Model. Some additional correlations with these dimensions are highlighted next.

As in the case of the mothers, FIRM Total scores were negatively correlated with a number of the FAM clinical scales including the mean of the FAM General Scale. Scores on the Task Accomplishment subscale of the General Scale and the Role Performance and Affective Expression subscales of the Dyadic Scale were particularly highly correlated with the FIRM Total scores. Generally, greater family resources were associated with paternal reports of better family functioning, particularly in the areas of task accomplishment, role performance, and affective expression. FIRM Total scores were also positively correlated with SSI Friends scores and negatively correlated with SSI Spiritual Faith and Special Groups scores. Higher family resources were associated with more emotional support from friends and less emotional support from spiritual faith and special groups. FIRM Total scores were also positively correlated with scores on the Coping I Pattern of the CHIP (i.e., Maintaining Family Integration, Cooperation and an Optimistic Definition of the Situation). Correlational patterns with the FIRM subscales were essentially similar to those of the FIRM total scores. Generally, higher scores on the Family Strengths I: Esteem/Communication subscale and the Family Strengths II: Mastery/Health subscale were associated with better family functioning (i.e., lower FAM scores), greater coping efforts on the part of the fathers (i.e., higher CHIP Total and CHIP I and II scores), more perceived support from friends (i.e., higher SSI Friends scores) and less support from special groups (i.e., lower SSI Special Groups scores). Again, relative to the mother sample, the relationship between the FIRM scores and the Coping and Social Support variables appeared to differ somewhat for the fathers. Scores on the Extended Family Social Support subscale of the FIRM were correlated with scores on the Relatives subscale of the SSI which was predictable.

With respect to the Social Support Inventory there were no additional correlations with the SSI Total scores at the .01 alpha level. The SSI Total scores were negatively correlated with several of the FAM scores at the .05 and .10 alpha levels (i.e., the Control subscale of the

General scale and the Involvement subscale of the Dyadic Scale). With respect to the SSI Spouse subscale there, again, were no additional correlations significant at the .01 alpha level. At the .05 and .10 alpha levels, however, there was an evident trend towards greater spousal support being associated with better overall family functioning (i.e., SSI Spouse scores negatively correlated with a number of the FAM clinical scales). This trend was consistent with that found for the mother sample where spousal emotional support appeared to be a critical variable in determining mothers' personal and intrafamily functioning. In the father sample the SSI Relatives scores were negatively correlated with a number of the FAM scales, and were also positively correlated with the CHIP scores (alpha = .05 or .10). In other words, greater support from relatives appeared to be associated with better family functioning and greater overall coping efforts. Interestingly, the SSI Friends scores for the fathers were very strongly associated with family functioning. The higher the SSI Friends scores, the generally better family functioning reported (i.e., SSI Friends scores correlated negatively (alpha = .01) with many FAM clinical scores). A similar trend also appeared to exist with respect to the SSI Co-workers variable. These findings may be consistent with the trend noted earlier where fathers appeared to report less emotional support from external supports (with the exception of Special Groups and Program) when stress levels were higher. The reverse trend appeared to occur in the case of the mother sample. Higher SSI Special Groups scores were moderately associated (i.e., alpha = .05 or .10) with less use of Coping Pattern I: Maintaining Family Integration, Cooperation, and an Optimistic Definition of the Situation, and with poorer general communication in the family. This, again, might reflect the trend noted earlier for fathers to become involved in special groups when stress levels were higher.

With respect to the Program Support variable, greater problems in overall family functioning were associated with fathers' reports of receiving more support from the child's educational program. This was consistent with the findings for the mother sample.

With respect to the Coping Dimension of the T-Double ABCX Model, the majority of the correlational trends involving the CHIP have already been discussed. A few remaining negative correlations with the FAM variables suggested that greater coping efforts on the part of the fathers were associated with generally better family functioning.

Finally, all significant correlations with the FAM clinical scales have already been discussed. No further explication is required here.

To summarize, the correlational trends associated with the father sample were, in many respects, similar to those of the mother sample. A pile-up of demands, emanating from either the special needs of the child or from other events or changes affecting the fathers, generally appeared to be associated with a lack or depletion of personal, intrafamily, and extended family resources, as well as with difficulties in the various aspects of overall family functioning. Role performance, task accomplishment, and affective expression, again, appeared to be vulnerable areas of family functioning, although this trend was somewhat less clear in the father sample. In the case of the fathers, generally poorer coping efforts also appeared to be quite consistently associated with greater parenting stress, a greater number or severity of negative life experiences, and fewer available resources. With respect to the mother sample, this trend did not appear to be quite as consistent. Mothers, for example, reported greater coping efforts when demands from life events and changes were higher. Fathers also appeared to experience a greater sense of social isolation under conditions of higher stress, especially from external sources of social support such as friends, relatives, and co-workers. Mothers, on the other hand, appeared to experience greater emotional support from external sources when demands were higher, possibly reflecting their greater predisposition to seek assistance from these sources when their personal and intrafamily resources were insufficient. Fathers did, however, appear to receive greater support from special groups, professionals, and the child's educational program when child-related demands were higher. As in the case of the mothers, less perceived emotional support from their spouses was associated with greater paternal and family stress as indicated by the Parent Domain scores on the PSI and the FAM scores. Spousal support appeared to be a significant resource facilitating the parents' personal functioning within their parenting and intrafamily roles. As in the mother sample, there was a strong relationship between FIRM scores and paternal reports of family functioning. In general, as would be predicted by the T-Double ABCX Model, greater personal, intrafamily, and social resources were associated with better family functioning. Finally, as already suggested, father's greater use of CHIP coping behaviors were generally associated with better family functioning.

Overall, the correlational trends associated with the father data did not appear to be inconsistent with what might be predicted by the T-Double ABCX Model of Family Adaptation. There were some differences between the mother and father sample correlations. These appeared to be associated primarily with the SSI and CHIP variables. These mother-father differences are examined more specifically in the following section.

5.5.3 Differences Between Mother and Father Correlations

The statistical significances of the differences between the ~~mother~~ and father sample correlations are presented in Table AI.4 in Appendix I. As can be seen from

Table AI.4, there were a considerable number of the correlations which were statistically different. Many of these, however, were isolated differences significant only at an alpha level of .10 or .05. In light of the large number of variables relative to the number of subjects, such isolated differences were not interpreted here. Of primary interest were isolated differences which were highly statistically significant (i.e., $p < .01$) or differences which existed amongst groups of variables reflecting an obvious pattern or trend.

It was suggested in the previous section that it appeared to be primarily the SSI and the CHIP variables which behaved somewhat differently for husbands and wives. An examination of Table AI.4 did reveal clusters of significant differences between the mother and father correlations on these variables. In addition, there were some significant differences between the mother and father correlations with respect to the PSI Health variable and with respect to several of the FAM variables. These mother-father difference trends are discussed briefly below.

The correlations between the scores on the PSI Health subscale and the PSI Total and Child Domain scores were significantly different for mothers and fathers. There existed a strong positive relationship between mothers' reports of health related problems and parenting stress. There was little or no relationship between these variables for fathers. The mothers' health appeared to be more negatively affected by child-related stress than was the fathers' health. This might reflect the strain and fatigue of the greater daily caretaking demands with which many of the mothers in the sample were faced.

With respect to the SSI variables, there was a moderate positive relationship for mothers between the SSI Total scores and the LES Total scores. For fathers, however, there was a strong negative relationship. Similarly, there existed a low positive relationship between mothers' total scores on the SSI and the Parent Total scores on the PSI. A strong negative relationship existed in the father sample. Generally, as fathers experienced increasing personal stress they reported experiencing less emotional support. In the mother sample, there was either no relationship or, the reverse trend appeared to exist. Interestingly, the correlation between the SSI total scores and the Depression subscale of the PSI was moderately positive for mothers and highly negative for fathers. It might be hypothesized that when personal stress is high, mothers tend to access more external sources of emotional support. Fathers, on the other hand, would appear to withdraw. A further examination of some of the SSI subscales provided some further insight into the role of social support in the functioning of mothers and fathers. There were few differences between the mothers and fathers with respect to the support received from spouse, children, and relatives. The differences appeared to be concentrated primarily in the Friends, Co-Workers, Community Groups, Professional, Special Groups, and Books/TV subscales of the SSI.

Correlations between the SSI Friends subscale scores and the LES and Parent Total scores were near zero for mothers and highly negative for fathers. When personal stress levels were higher, fathers tended to report receiving less emotional support from friends. The lack of relationship between personal stress and friendship support in the mother sample would suggest that the emotional support offered to mothers was relatively independent of maternal stress levels. The mean and range of the maternal scores on the SSI Friends subscale indicated that nearly all of the mothers in the sample appeared to be experiencing a high level of emotional support from friends.

A similar correlational trend existed with respect to the SSI Co-workers variable and the LES Total and Parent Domain scores. The near zero relationship for mothers was not surprising given that the majority of the mothers did not work full-time. The strong negative relationship for fathers, however, was of some interest. The more personal stress fathers reported experiencing, the generally less support they reported experiencing from co-workers.

The SSI Community Groups scores had a moderate positive correlation with LES Total scores in the mother sample but were moderately negatively correlated in the father sample. LES Total and Parent Domain Total scores were positively correlated with the SSI Professionals scores in the mother sample but had moderate to high negative correlations in the father sample. Generally, when personal stress levels were higher mothers appeared to gain more support from Community Groups and Professionals while fathers, on the other hand, appeared to gain less. A similar relationship existed between the stress scores (i.e., LES Total, PSI Total, Parent Domain score) and the SSI TV/Books scores.

Fathers did, however, appear to obtain support from special groups (e.g., parent support groups) when child-related stress was higher. The SSI Special Groups scores were positively correlated with Child Domain scores and PSI Total scores in the father sample. There was little or no relationship between these variables for mothers.

To summarize, it would appear that fathers and mothers experience their external social networks somewhat differently. When fathers were experiencing increased personal stress they appeared to feel more isolated from external sources of support such as friends and co-workers. When the stressors were associated primarily with the special needs of the child, however, fathers did appear to gain support from special groups and the child's program. When personal stress was higher mothers, on the other hand, appeared to experience greater support from some external sources such as professionals. This might reflect a greater tendency on the part of the females to access such sources when personal and intrafamily resources were insufficient.

With respect to the Coping dimension, there were a number of significant correlational differences in the husband and wife samples. CHIP Total scores were positively correlated with LES Total and LES Negative scores in the mother sample. There existed a low to moderate negative correlation between these variables in the father sample. A similar relationship existed between the CHIP Total scores and several of the subscale scores on the PSI Parent Domain. It would appear that when personal stresses were higher, mothers tended to employ more of the CHIP coping behaviors. This relationship did not appear to exist for fathers. The correlation between CHIP Total scores and the scores on the SSI Special Groups subscale was also significantly different for husbands and wives. The correlation was highly positive for mothers and low to moderately negative for fathers. Despite the fact the fathers reported obtaining more emotional support from special groups when child-related stress was higher, it would appear that support from these groups was associated with greater coping efforts on the part of mothers but not fathers.

The pattern of differences between mother-father correlations with the CHIP Total variable was similar to that which occurred with the CHIP I and CHIP II variables.

With respect to the CHIP III Coping pattern, there again existed moderate to high positive correlations with the LES Total, LES Negative, and PSI Parent Total variables in the mother sample and moderate negative correlations with these variables in the father sample. Mothers appeared to consult with other parents of handicapped children and/or professionals to a greater degree when personal stress was higher. For fathers the reverse trend appeared to exist. It is interesting to note that the CHIP III coping pattern taps behaviors designed to access external sources of support and behaved very similarly to the SSI external support variables. Again, the fathers appeared to be more isolated from external sources of support when personal stress was higher. In addition, there existed a high negative correlation between maternal scores on the CHIP III coping pattern and maternal FIRM Total scores. This would again suggest that mothers tended to seek out external sources of support when personal and intrafamily resources were lower. Little or no relationship existed between these variables for fathers.

In summary, it would appear that there existed some differences between the mothers and fathers with respect to the Coping dimension. When personal stress was higher, mothers appeared to engage in more of the CHIP coping behaviors including consultation with professionals and other parents. In the case of the fathers, however, there appeared to be either little relationship or a negative relationship between the coping variables and personal stress.

With respect to the FAM variables, there were a number of isolated differences between the mother-father correlations. The majority of the differences, however, were concentrated in the Task Accomplishment and Role Performance subscales of the General, Dyadic, and Self-Rating Scales. In the mother sample dyadic role performance was very highly correlated with the mean of Dyadic Scale and with scores on the Dyadic Involvement subscale. These same correlations were low to moderate in the father sample. Dyadic task accomplishment in the mother sample was also very highly correlated with scores on a number of the subscales of the FAM General Scale including the mean scores. These same correlations were again low to moderate in the father sample. It would appear that mothers' satisfaction with husbands' role performance and task accomplishment was particularly salient in determining mothers' perception of overall family functioning, generally, and husbands' functioning within the family, specifically. While the same relationship did exist for fathers with respect to their wives functioning in these areas, it did not appear to be as strong.

In the father sample there were several moderate to high negative correlations between scores on the Role Performance subscales of the General and Dyadic scales and scores on the SSI pertaining to external sources of support. This was consistent with data presented earlier suggesting that husbands appeared to experience less support from external sources (e.g., friends) when stress levels were higher. These same correlations approached zero in the mother sample. There did, however, exist a positive correlation between maternal scores on the CHIP III coping pattern and scores on the role performance subscale of the Dyadic Relationships Scale. When mothers were more dissatisfied with their spouses' role performance in the family, they tended to cope by becoming more involved with other parents of handicapped children and with professionals. This may be consistent with data presented earlier suggesting that mothers tended to be more involved with external support sources when intrafamily resources were lacking or depleted. The correlation between scores on the CHIP III coping pattern and scores on the Role Performance subscale of the Dyadic Scale approached zero for fathers.

In the father sample there was a high positive correlation between scores on the Role Performance subscale of the Self-Rating Scale and the total and Parent Domain scores of the PSI. Fathers' perception of their own role performance in the family appeared to be quite highly tied to parenting issues. There was little or no relationship between these variables in the mother sample. Extended family social support as measured by the FIRM Extended Family Social Support subscale was associated with reports of better personal role performance on the part of the mothers. There was no relationship between these variables in the father sample. Finally, there was a moderate positive correlation between maternal scores on the role performance subtest of the Self-Rating Scale and the CHIP II coping pattern. In the father sample, however, there existed a moderate negative correlation between these variables. This was somewhat consistent with data presented earlier suggesting that increased levels of personal stress tended to be associated with increased coping efforts on the part of mothers and fewer CHIP Coping behaviors on the part of fathers.

In conclusion, despite relatively few differences in the mean scores of husbands and wives on the self-report measures, there were some significant differences in the correlational patterns of the scores from the two groups. The social support, coping, and FAM role performance and task accomplishment variables appeared to behave somewhat differently for mothers and fathers.

5.5.4 Summary of the Correlational Results

In general, results of the correlational data appeared to be relatively consistent with what might be predicted by the T-Double ABCX Model of Adaptation. A pile-up of stressors did appear to be associated with a depletion or lack of personal, intrafamily, and social resources, with parental stress, and with some difficulties in various aspects of family functioning. Some differences, however, were apparent between the husband and wife correlations. These differences appeared to be associated primarily with the coping and social support dimensions suggesting that fathers and mothers may differ in the ways in which they cope with demands and stressors, and in the way in which they experience their support networks. While the differences between the mothers and fathers could not be fully explicated within the context of the correlational analyses, enough evidence of some significant differences did exist to warrant treating the samples separately within the regression analyses which were employed to explore the usefulness of the T-Double ABCX Model in predicting family adaptation to the demands of raising a handicapped child. In the following sections the results of these regression analyses are described.

5.6 Regression Analyses

In the following sections the results of the regression analyses, employed to predict Family Adaptation (i.e., mean FAM scores) from the measures of the Pile-up (AA), Resources (BB, BBB), and Coping (PSC) dimensions of the T-Double ABCX model, are presented for both the mother and father samples. Separate regression analyses were conducted to predict the means of the FAM General, Dyadic, and Self-Rating Scales. With respect to the pile-up dimension, the severity of the handicap variable (i.e., chronological age - mental age) was uncorrelated with the FAM means and thus was not included in the regression analyses. Similarly, the SES variable did not correlate with the FAM means and was dropped from the Resources dimension for the purposes of the regression analyses.

In addition to the regression analyses employed to predict FAM means from the combined Pile-up, Resources, and Coping dimensions (i.e., the full model analyses), three additional sets of analyses were conducted to examine the roles of the Pile-up, Resources, and Coping dimensions separately in predicting FAM mean scores. These partial models allowed several of the predictor variables to be examined in more detail. For example, in the full model analyses the CHIP Total scores were employed rather than the three Coping pattern Scores (i.e., CHIP I, II, III) in order to reduce the number of predictor variables. In the partial model, which examined the role of the Coping dimension alone in predicting FAM means, the three CHIP coping pattern scores were employed. This was considered to be important since the results of the correlational analyses described earlier suggested that the three coping patterns may behave somewhat differently. Regression equations resulting from the full model analyses are presented first followed by the regression equations resulting from the partial models.

5.6.1 Regression Analyses For Mothers

The predictor variables employed in the full model analyses were: the total scores on the Parenting Stress Index (i.e., PSITOT); the total scores on the Life

Experiences Survey (i.e., LESTOT); the total scores on the Family Inventory of Resources for Management (i.e., FIRMTOT); the total scores on the Social Support Inventory (i.e., SSITOT); the Program Support Score (i.e., PSUPTOT); and the total scores on the Coping Health Inventory for Parents (i.e., CHIPTOT). The orthogonal regression equations for predicting the mothers' mean scores on the FAM General Scale (i.e., FAMGMEA), the FAM Dyadic Scale (i.e., FAMDMEA), and the FAM Self-Rating Scale (i.e., FAMSMEA) were obtained as:

$$\begin{aligned}
\text{FAMGMEA} &= -\,0.12\ \text{PSITOT} + 0.35\ \text{LESTOT} - 0.66\ \text{FIRMTOT} \\
&\quad -\,0.38\ \text{SSITOT} + 0.20\ \text{PSUPTOT} + 0.11\ \text{CHIPTOT}, \\
\text{FAMDMEA} &= -\,0.17\ \text{PSITOT} + 0.36\ \text{LESTOT} - 0.68\ \text{FIRMTOT} \\
&\quad -\,0.25\ \text{SSITOT} + 0.29\ \text{PSUPTOT} - 0.01\ \text{CHIPTOT}, \\
\text{FAMSMEA} &= -\,0.05\ \text{PSITOT} + 0.29\ \text{LESTOT} - 0.47\ \text{FIRMTOT} \\
&\quad -\,0.46\ \text{SSITOT} + 0.24\ \text{PSUPTOT} - 0.04\ \text{CHIPTOT}.
\end{aligned}$$

The multiple R's for these equations are 0.88 ($p = .015$), 0.88 ($p = .015$), and 0.77 ($p = .141$), respectively. Because the predictors are orthogonal, the regression weights are zero order correlations. The correlations between the original variables and the orthogonalized variables ranged between 0.82 and 0.93. In all three equations the weights of the PSITOT and the CHIPTOT were very small suggesting that these variables made little or no contribution to the variability in FAM scores in the mother sample. The weights for the LESTOT in all three equations were positive, as would be predicted, and suggested that this variable made some contribution to the variability in the FAM scores. A greater number and/or a severity of life events and changes was associated with poorer family functioning. The FIRMTOT variable was the most important in all three equations. The weight was negative, as would be expected. Greater family resources were generally associated with better overall family functioning. The SSITOT variable also contributed to the variability in the FAM scores. This was particularly true in the case of the Self Rating Scale suggesting that greater emotional support was associated with better overall family functioning generally, and with the mothers' greater satisfaction with their own functioning within the family, specifically. The PSUPTOT variable appeared to make some contribution to the variability in the FAM scores. Unlike the SSITOT variable, however, the weight for the PSUPTOT was positive. Greater support from the child's educational program was associated with poorer family functioning. As suggested previously, this may indicate that the educational programs tend to provide the mother with greater emotional support when intrafamily resources are less available.

Overall, it would appear that in the mother sample, the family resources and social support dimensions were important in predicting maternal reports of family adaptation. LES scores also contributed to the variability in the FAM means suggesting that demands facing the mothers independent of those created by the special needs of the handicapped child, had an effect on mothers' perceptions of overall family functioning. Finally, the full model explained a considerable amount of the variance in the FAM General Scale (i.e., 77%), in the FAM Dyadic Scale (i.e., 77%) and in the FAM Self Rating Scale (i.e., 58%).

The first partial model examined the contribution of the Pile-up dimension alone to the variability in FAM scores. The predictor variables employed were: the Parent Domain Total scores from the PSI (i.e., PARTOT); the CHILD Domain Total Scores from the PSI (i.e., CHITOT); and the total scores from the Life Experiences Survey (i.e., LESTOT). The orthogonal regression equations for predicting the mothers' mean score on the FAM General Scale, the FAM Dyadic Scale, and the FAM Self-Rating Scale were obtained as:

$$\text{FAMGMEA} = 0.06\ \text{PARTOT} + 0.03\ \text{CHITOT} + 0.51\ \text{LESTOT},$$

$$\text{FAMDMEA} = 0.02\ \text{PARTOT} - 0.00\ \text{CHITOT} + 0.54\ \text{LESTOT},$$

$$\text{FAMSMEA} = -0.07\ \text{PARTOT} + 0.18\ \text{CHITOT} + 0.40\ \text{LESTOT}.$$

The multiple R's for these equations are 0.51 ($p = .289$), 0.53 ($p = .250$), and 0.44 ($p = .443$), respectively. Since the predictors are orthogonal, the regression weights are zero order correlations. The correlations between the original variables and the orthogonalized variables ranged between 0.95 and 0.98. In all of the equations the weights for the PARTOT and the CHITOT were negligible. Neither child-related stress nor parent-related stress contributed to the variability in the mean FAM scores for the mother sample. This was consistent with the findings for the full model where the PSITOT variable did not contribute significantly to the variability in the mean FAM scores. The LESTOT variable did contribute to the variability of the FAM mean scores consistent with the findings from the full model. Overall, the Pile-up dimension contributed 26% of the variance in the FAM General Scale, 29% of the variance in the FAM Dyadic Scale, and 20% of the variance in the FAM Self-Rating Scale.

The second partial model examined the contribution of the Resource dimension alone to the variability in FAM scores. The predictor variables employed were: the total scores from the Family Inventory of Resources for Management (i.e., FIRMTOT); the total Scores on the Social Support Inventory (i.e., SSITOT); and the Program Support Scores (i.e., PSUPTOT). The orthogonal regression equations were obtained as:

$$\mathrm{FAMGMEA} = -\,0.65\ \mathrm{FIRMTOT} - 0.27\ \mathrm{SSITOT} + 0.33\ \mathrm{PSUPTOT},$$

$$\mathrm{FAMDMEA} = -\,0.65\ \mathrm{FIRMTOT} - 0.20\ \mathrm{SSITOT} + 0.37\ \mathrm{PSUPTOT},$$

$$\mathrm{FAMSMEA} = -\,0.49\ \mathrm{FIRMTOT} - 0.38\ \mathrm{SSITOT} + 0.34\ \mathrm{PSUPTOT}.$$

The multiple R's for these equations are 0.78 ($p = .009$), 0.78 ($p = .009$), and 0.71 ($p = .033$), respectively. The correlations between the original variables and the orthogonalized variables ranged between 0.98, and 1.0. The FIRMTOT was the most important variable but the SSITOT and PSUPTOT also made some contribution to the variability in the FAM scores. The SSITOT made its most significant contribution to the mean of the FAM Self Rating Scale again suggesting that emotional support was particularly important to the mothers' perception of their own functioning in the family. Overall, the Resource Dimension contributed 61% of the variance in the FAM General Scale, 60% of the variance in the FAM Dyadic Scale, and 50% of the variance in the FAM Self-Rating Scale.

The third partial model examined the contribution of the Coping dimension alone to the variability in FAM scores. The predictor variables employed were the scores on Coping Patterns I, II, III of the Coping Health Inventory for Parents (i.e., CHIPI, CHIPII, CHIPIII). The orthogonal regression equations were obtained as:

$$\text{FAMGMEA} = -\,0.35\ \text{CHIPI} + 0.34\ \text{CHIPII} + 0.47\ \text{CHIPIII},$$

$$\text{FAMDMEA} = -\,0.37\ \text{CHIPI} + 0.35\ \text{CHIPII} + 0.40\ \text{CHIPIII},$$

$$\text{FAMSMEA} = -\,0.40\ \text{CHIPI} + 0.36\ \text{CHIPII} + 0.24\ \text{CHIPIII}.$$

The multiple R's for these equations are 0.67 ($p = .060$), 0.65 ($p = .077$), and 0.59 ($p = .149$), respectively. The correlations between the original variables and orthogonalized variables ranged between 0.93 and 0.98. This partial model presented a somewhat different view of the Coping dimension than did the full model. In the full model the CHIPTOT variable did not contribute significantly to the variability in the FAM scales. When the CHIP was broken down into its component Coping Patterns, however, some influence of the Coping dimension was revealed. Each Coping pattern made a contribution to the variability in the FAM scales. The weights of the CHIPI pattern were negative indicating that mothers' efforts to maintain family integration, cooperation and an optimistic view of the situation were associated with generally better family functioning. The weights for the CHIP II and III patterns, however, were positive indicating the mothers' efforts to maintain social support, self esteem, and psychological stability, and to understand their child's medical situation through consultation with other parents and medical staff, was associated with poorer levels of family functioning. This would appear to be consistent with the hypothesis proposed earlier that mothers tended to seek help from external sources of support when intrafamily resources were less available. Overall, the Coping dimension contributed 46% of the variance in the FAM General Scale, 42% of the variance in the FAM Dyadic Scale, and 35% of the variance in the Self Rating Scale.

5.6.2 Regression Analyses For Fathers

The same four regression analyses employed with the mother sample were conducted for the father sample. The predictor variables employed for the full model again were: the total score on the PSI (i.e., PSITOT); the total score on the Life Experiences Survey (i.e., LESTOT); the total score on the Family Inventory of Resources for Management (i.e., FIRMTOT); the total score on the Social Support Inventory (i.e., SSITOT); the Program Support Score (i.e., PSUPTOT); and the total score on the Coping Health Inventory for Parents (i.e., CHIPTOT). The orthogonal regression equations for predicting fathers' mean scores on the FAM General Scale (i.e., FAMGMEA), the FAM Dyadic Scale (i.e., FAMDMEA), and the FAM Self-Rating Scale (i.e., FAMSMEA) were obtained as

$$\begin{aligned}\text{FAMGMEA} &= +.45\ \text{PSITOT} +.29\ \text{LESTOT} -.28\ \text{FIRMTOT}\\ &\quad -.18\ \text{SSITOT} +.34\ \text{PSUPTOT} -.27\ \text{CHIPTOT},\\ \text{FAMDMEA} &= +.47\ \text{PSITOT} +.03\ \text{LESTOT} -.32\ \text{FIRMTOT}\\ &\quad -.16\ \text{SSITOT} +.41\ \text{PSUPTOT} -.01\ \text{CHIPTOT},\\ \text{FAMSMEA} &= +.38\ \text{PSITOT} +.08\ \text{LESTOT} -.25\ \text{FIRMTOT}\\ &\quad -.07\ \text{SSITOT} +.34\ \text{PSUPTOT} -.18\ \text{CHIPTOT}.\end{aligned}$$

The multiple R's for these equations are 0.77 ($p = .141$), 0.72 ($p = .249$), and 0.60 ($p = .567$), respectively. Again, since the predictors are orthogonal, the regression weights are zero order correlations. The correlations between the original variables and the orthogonalized variables ranged between .88 and .97.

The PSITOT variable explained the most variability in the FAM General, FAM Dyadic, and FAM Self-Rating Scales. This was quite different from the regression equation produced for the mothers' full model where the PSITOT variable made little or no contribution. For the fathers, high parenting stress was associated with reports of poorer family functioning. The LES variable contributed to the variability in the FAM General Scale. Interestingly, it explained little or no variability in the FAM Dyadic and

Self-Rating Scales. A greater number or severity of life events or changes experienced by the fathers were associated with reports of poorer overall family functioning but did not explain the variability in the fathers' perception of their own personal functioning or that of their wives. The FIRMTOT also explained some of the variability in the fathers' FAM scores. As in the mother sample, greater family resources were associated with generally better family functioning. The weights for the SSITOT suggested that this variable explained a limited amount of the variance in the fathers' FAM scores. The SSI variable played a more significant role in the regression equation produced for the mothers' full model where it explained a substantial amount of the variance in the mothers' FAM scores. Unlike the SSITOT, the PSUPTOT variable was the second most important variable in the fathers' full model regression equation. As in the mother sample, greater support from the child's educational program was associated with poorer family functioning. Again, this may reflect the fathers' tendency to gain more support from their child's program when intrafamily resources were less available. Finally, CHIPTOT also explained some of the variability in the FAM General Scale for the fathers but explained little or no variability in the FAM Dyadic and Self-Rating Scales. Generally, poorer coping efforts on the part of the fathers were associated with poorer overall family functioning. The fathers', however, tended not to report a relationship between their coping efforts and their own or their spouses' personal functioning within the family. Overall, the full model explained 59% of the variability in the FAM General Scale, 52% of the variance in the FAM Dyadic Scale, and 37% of the variance in the FAM Self-Rating Scale for the fathers.

The first partial model examined the influence of the Pile-up dimension alone on the adaptive functioning of the family. The predictor variables employed for the partial model were: the total scores on the Parent Domain of the PSI (i.e., PARTOT); the total scores on the Child Domain of the PSI (i.e., CHITOT); and the total scores on the Life Experiences Survey (i.e., LESTOT). The orthogonal regression equations for predicting fathers' mean scores on the FAM Scales were obtained as:

$$\text{FAMGMEA} = +.53\ \text{PARTOT} +.30\ \text{CHITOT} +.34\ \text{LESTOT},$$

$$\text{FAMDMEA} = +.38\ \text{PARTOT} +.37\ \text{CHITOT} +.14\ \text{LESTOT},$$

$$\text{FAMSMEA} = +.39\ \text{PARTOT} +.27\ \text{CHITOT} +.12\ \text{LESTOT}.$$

The multiple R's for these equations are 0.77 ($p = .011$), 0.72 ($p = .028$), and 0.60 ($p = .135$), respectively. The correlations between the original variables and the orthogonalized variables ranged between .88 and .95. All three predictor variables contributed to the variance in the FAM General Scale. The PARTOT was the most important variable in the regression equations. This result was clearly different from the corresponding regression equations obtained for the mother sample where, surprisingly, parenting stress did not account for a significant amount of the variance in the FAM Scales. For the fathers there existed a very clear relationship between a pile-up of demands or stressors and poorer overall family functioning. In the case of the mothers this relationship was less clear. The LESTOT variable explained much less of the variance in the FAM Dyadic and Self-Rating Scales than in the FAM General Scale. This trend was already noted with respect to the full model equations. Overall, the Pile-up dimension accounted for 48% of the variance in the FAM General Scale, 30% of the variance in the FAM Dyadic Scale and 24% of the variance in the Self-Rating Scale.

The second partial model examined the influence of the Resources dimension alone on the adaptive functioning of the family. The predictor variables employed were: the total scores on the Family Inventory of Resources for Management (i.e., FIRMTOT); the total scores on the Social Support Inventory (i.e., SSITOT); and the Program Support Score (i.e., PSUPTOT). The orthogonal regression equations for predicting fathers' mean scores on the FAM Scales were obtained as:

FAMGMEA = -.46 FIRMTOT -.32 SSITOT +.31 PSUPTOT,
FAMDMEA = -.43 FIRMTOT -.18 SSITOT +.38 PSUPTOT,
FAMSMEA = -.37 FIRMTOT -.12 SSITOT +.31 PSUPTOT.

The multiple R's for these equations are 0.64 ($p = .087$), 0.61 ($p = .122$), and 0.50 ($p = .310$), respectively. The correlations between the original variables and the orthogonalized variables ranged between .98 and .99. All three of the predictor variables explained some of the variance in the FAM General Scale. The SSITOT did not explain a significant amount of the variance in the FAM Dyadic and Self-Rating Scales. Generally, as expected, greater family resources were associated with better family functioning. Greater overall social support was also associated with better overall family functioning but did not predict fathers' perceptions of their own or their spouses personal functioning within the family. Consistent with the full model, greater program support was associated with generally poorer adaptive functioning of the family. Overall, the Resources dimension alone accounted for 41% of the variance in the FAM General Scale, 37% of the variance in the FAM Dyadic Scale, and 25% of the variance in the Self-Rating Scale.

The final partial model examined the influence of the Coping dimension alone on the adaptive functioning of the family. The predictor variables were the three coping patterns of the Coping Health Inventory (i.e., CHIP I, II, III). The orthogonal regression equations for predicting the fathers' mean scores on the FAM Scales were obtained as:

$$\text{FAMGMEA} = -.35\ \text{CHIPI} - .17\ \text{CHIPII} - .20\ \text{CHIPIII},$$

$$\text{FAMDMEA} = -.37\ \text{CHIPI} + .03\ \text{CHIPII} + .16\ \text{CHIPIII},$$

$$\text{FAMSMEA} = -.16\ \text{CHIPI} - .23\ \text{CHIPII} - .10\ \text{CHIPIII}.$$

The multiple R's for these equations are 0.44 ($p =$

.443), 0.41 (p = .513), and 0.30 (p = .759), respectively. The correlation between the original variables and the orthogonalized variables ranged between .89 and .94. The CHIPI variable was the most important in explaining the variability in the FAM General and the FAM Dyadic Scales. Fathers' who reported engaging in more of the CHIPI coping behaviors (i.e., behaviors directed at maintaining family integration, cooperation, and an optimistic view of the situation) tended also to report better overall family functioning, and appeared to be more pleased with their spouses' functioning within the family as well. The CHIP I coping pattern contributed little to the variability in the FAM Self-Rating Scale, however. The CHIP III coping pattern also explained only a small amount of the variability in the FAM General Scale. Fathers who reported engaging in coping behaviors directed at understanding their child's medical condition through consultation and discussion with professionals and other parents, also reported somewhat better overall family functioning. The CHIP III coping pattern, however, explained little of the variance in the Dyadic or Self-Rating scales. The CHIP II coping pattern explained little of the variance in the General or Dyadic Scales but it did explain some of the variance in the Self-Rating Scale. Coping efforts directed towards maintaining their own physical and psychological health, and towards maintaining supportive social relationships were associated with better personal functioning on the part of the father. Overall, the Coping dimension alone predicted 19% of the variance in the FAM General Scale, 17% of the variance in the Dyadic Scale, and 9% of the variance in the Self-Rating Scale for fathers.

5.6.3 Summary of the Regression Analyses

Overall, the results of the regression analyses provided some support for the importance of the Pile-up, Coping, and Resources dimensions of the T-Double ABCX Model in predicting family adaptation (i.e., FAM scores) in the face of the demands of raising a handicapped child. The full model accounted for 77% of the variance in the FAM General Scale for mothers, and 59% of the variance in the FAM General Scale for fathers. The overall fit of the fathers' data to the full model was not as good as was the case in the mother sample. The multiple R approached but did not reach statistical significance in the father sample (i.e., p = .14).

With respect to the three partial models, the Pile-up dimension alone accounted for 26% of the variance in the FAM General Scale for mothers, and 48% of the variance for fathers. The multiple R was statistically significant in the father sample but not in the mother sample. The Resources dimension alone accounted for 61% of the variance in the General Scale for mothers, and 41% for fathers. The multiple R was statistically significant for the mother sample and approached significance for the father sample (i.e., p = .087). The Coping dimension accounted for 46% of the variance in the FAM General Scale for mothers, and 19% for fathers. The multiple R approached significance for the mother sample (i.e., p = .06) but did not reach significance for the fathers.

In the case of the mothers, only the parenting stress measure (i.e., the PSI) did not explain some variance in the FAM General Scale when the full and partial models were considered together (i.e., the CHIPTOT variable made little contribution to the full model but the CHIP I, CHIP II, and CHIP III variables made contributions in the partial model tapping the Coping dimension alone). In the case of the fathers, all the variables appeared to be important in explaining the variance in the FAM General Scale when both the full and partial models were considered (i.e., the SSITOT variable contributed to the partial model tapping the Resources dimension alone but made a negligible contribution to the full model). The correlational analyses of the mother data, however, indicated that the parenting stress scores were inversely related to the FIRM scores, CHIP I scores, SSI Husband, SSI Children and SSI Relatives scores, suggesting that the role of parenting stress for mothers was also likely important but had a less direct relationship with family adaptation as measured by the FAM.

The contributions of the LESTOT, FIRMTOT, and PSUPTOT variables in predicting the mean of the FAM General Scale were fairly consistent across the mother and father samples. The SSITOT variable, as already mentioned, played a minor role in the full model for fathers but played a greater role in the partial model. The SSITOT variable contributed to the variance in the FAM scores in both the partial and full models for the mothers. The relatively small regression weight of the SSI variable in the full model for fathers might be explained by the very large weight afforded the PSITOT variable. When the PSITOT and LESTOT variables were removed in the partial model, the contribution of the SSI variable became more evident. As already indicated, the parenting stress variables (i.e., PSITOT, PARTOT, and CHITOT) explained a substantial amount of the variance in the FAM General Scale for fathers but explained very little variance in the FAM General Scale for mothers. As suggested by the correlational analyses, the Coping variables (i.e., CHIPTOT, CHIP I, II, III) behaved somewhat differently in the mother and father regression equations. In the full model equations, the regression weight of the CHIPTOT variable was small and positive for the mothers, and was larger and negative for the fathers. Examination of the corresponding partial models revealed some notable differences between the mother and father samples with respect to the three coping patterns. Firstly, the overall role of the Coping dimension was more important in explaining scores on the General Scale for mothers than for fathers (i.e., 41% of the FAMG variance explained by the three coping patterns for mothers and 19% for fathers). All three coping patterns explained some of the variance in the General, Dyadic, and Self-Rating Scales for mothers. The role of the coping dimension in the father sample was much less clear. Coping patterns I and II, only, explained any of the variance in the General Scale for fathers. Coping Pattern I, only, made a contribution to the variability in the Dyadic Scale. Coping Pattern II, only, contributed to the variability in the Self-Rating Scale. Furthermore, the signs were positive for the regression weights of the CHIP II and III Coping Patterns for the mothers and negative for these patterns in the father equations. As in the correlational analyses, it appeared that the mothers tended to seek out external sources of support when family resources were less available whereas this did not appear to be a predominant coping strategy of fathers.

Finally, the regression equations produced for the FAM General, Dyadic, and Self-Rating Scales were very similar for mothers, with the Pile-up, Resources, and Coping dimensions consistently explaining the most variance in the FAM General Scale and the least variance in the FAM Self-Rating Scale. In the case of the fathers, however, the regression equations across the FAM Scales were less consistent. This might suggest that mothers tended to evaluate their families' functioning on a more global basis than did fathers.

CHAPTER VI

DISCUSSION

6.1 Introduction

In this chapter the results of the investigation are summarized and placed within the context of the theory and literature presented. An evaluation of the T-Double ABCX Model of Adaptation as a means of guiding further inquiry into the adaptive process of families raising children with handicaps is provided. The limitations of the study are examined, and some directions for further research are provided.

6.2 Summary and Implications of Results

The sample of parents participating in the study were mature and well established. None of the parents were younger than 25 years of age and all of the primary income earners had stable employment. The majority of the parents were also well educated and financially secure. The socioeconomic status scores of all but one of the families fell within the middle to upper range. Only 4 of the 16 mothers were working full-time.

Nine of the children participating in the study were male and seven were female. The mean chronological age of the children was 44.31 months (sd = 7.26 months) and the mean mental age was 21.38 months (sd = 10.46 months). In addition to their intellectual impairments, half of the children also had physical disabilities. The actual diagnostic classification of the children varied.

the children were first born, 6 were second born, and 3 were third born. Fourteen of the children had one or more siblings.

In general, the majority of the families appeared to be adapting very well to the demands of raising their children with significant handicaps. While the Child Domain dimension of the PSI suggested that both mothers and fathers were indeed experiencing high levels of stress associated with their children's special needs, the majority reported functioning quite well in their parenting roles. The fathers, in particular, reported relatively few problems in their own functioning as a result of parenting their handicapped child. In fact, the mean scores for fathers on the Parent Domain dimension of the PSI were no higher than the normative sample of fathers who were not raising children with special needs. The mothers' mean scores on the Parent Domain, while in the nonclinical range, were significantly higher than the fathers' scores. This finding was consistent with previous research (e.g., Kazak & Marvin, 1984) which has suggested that mothers caring for children with significant special needs experience more parenting stress than do fathers. This may reflect the mothers' greater involvement with the child on a day to day basis. The majority of the mothers in the current sample were in the home full-time or worked only part-time. It was notable that there was a significant difference between mothers' and fathers' mean scores on the

Role Restriction subscale of the Parenting Stress Index. Mothers tended to feel more restricted than did fathers. This was consistent with some previous literature (Mardiros, 1985) and is not surprising given that the special needs of the child often require full-time parenting on the part of the mothers. This limits their opportunity for outside employment or other activities. There was also a significant difference between mothers' and fathers' mean scores on the Health subscale of the Parenting Stress Index. Mothers reported experiencing more health-related concerns than did fathers, and this may suggest that the stress of the greater caretaking demands on the mothers was being reflected in their physical health. The difference between mothers' and fathers' mean scores on the Depression and Spousal Relationship subscales also approached but did not reach statistical significance. There appeared to be a trend towards mothers, as a group, feeling more depressed and less satisfied with their marital relationship than the fathers.

As a group, the parents in the current sample did not report experiencing more major life events or changes in the preceding year than would likely be expected for parents, in general, during a similar stage of family development. There was no significant difference between the mothers and fathers in the number and/or severity of events reported.

The level of available personal, family system, and extended family resources reported by the parents on the Family Inventory of Resources for Management was generally very consistent with that of the normative sample of parents raising children with myelomeningocele or cerebral palsy. The current sample, however, reported possessing somewhat greater financial resources than did the normative sample.

As indicated by the Social Support Inventory, the parents also reported experiencing a moderate overall level of emotional support relative to parents in general. They reported receiving high levels of support from their immediate and extended family networks, and somewhat less support from the community network. There was no significant difference between the mothers and fathers in the total amount of affective support reported. The mothers, however, reported receiving significantly more support from friends and professionals than did fathers. The fathers, on the other hand, reported receiving more support from co-workers which was not surprising given that the majority of mothers were not employed outside the home on a full-time basis.

The coping patterns of the parents in the current investigation did not differ markedly from the coping patterns of the parents in the normative sample who were also raising children with special needs. Both fathers and mothers, in general, reported engaging in behaviors to enhance family integration, cooperation, and optimism, as well as to develop supportive social relationships, and to care for their own physical and psychological health. The mothers, however, reported undertaking a greater number of behaviors aimed at acquiring knowledge and understanding of their child's special needs through consultation with professionals and other parents, and at mastering required home care treatments. There was no significant difference between the fathers' and mothers' mean total scores on the CHIP.

As a group, the parents also reported satisfactory overall family functioning. The mean scores across all three scales of the Family Assessment Measure fell within the healthy family functioning range relative to the normative sample of nonclinical families. There were no significant differences in any of the mean scores between husbands and wives. Both mothers and fathers, as a group, scored within the normal range on the two response style subscales (i.e., Social Desirability and Defensiveness) although there were some scores falling both above and below the normal range on each of these scales. Four of the 16 fathers had Social Desirability scores more than one standard deviation above the mean.

Overall, the results of the self-report measures suggested that the parents in the current investigation were experiencing significant levels of stress associated with characteristics or behaviors of their handicapped child's functioning. In spite of this high level of child-related stress, however, the parents, as a group, reported that they were managing satisfactorily in their parenting roles and that their overall family systems were functioning well. There was no evidence, in the majority of cases, that excessive demands were depleting the parent's personal, family system, or social resources, although the mothers did report experiencing significantly more personal stress than did the fathers. The majority of parents also appeared to be employing a variety of coping behaviors in their efforts to deal with the demands facing them.

This generally positive picture, however, was not uniformly true. On each of the self-report measures there were some parents reporting significant problems. Approximately 25% of the sample of mothers and fathers reported significant difficulties in overall family functioning on the FAM, indicating that some families might be adapting less well. This would seem to be consistent with the recent literature (Beavers et al., 1986, Friedrich & Schaffer, 1986; Trute & Hauch, 1988a) suggesting that, while some families may experience significant difficulties, other families of handicapped children adapt surprisingly well without adverse effect on the well being of individual family members or on overall family functioning. If this is the case, research efforts should be directed towards identifying characteristics of these well-functioning families which contribute to their successful adaptation. Intervention efforts might then be directed towards fostering similar strengths or attributes in families adapting less successfully.

In order to further clarify the relationships between stressor pile-up, resources, coping, and family adaptation, two further sets of analyses were undertaken. Firstly, a correlational analysis of the test measures was undertaken for husbands and wives, and comparisons of husband-wife correlations were made. Secondly, regression models were developed to predict family adaptation (i.e., FAM III scores) from the summary measures of the pile-up, resources, and coping dimensions of the T-Double ABCX Model. The correlational analyses provided a general overview of the relationship among all of the variables, including demographic data and all subscale scores on the self-report measures. The regression analyses allowed for a more direct assessment of the usefulness of the T-Double ABCX Model in facilitating our understanding of the adaptive process of families faced with the demands of raising a child with significant special needs.

The maternal correlation trends were generally consistent with what would be predicted by the T-Double ABCX Model. Scores on the self-report measures of the Pile-up dimension (i.e., PSI and LES) were negatively correlated with the FIRM scores suggesting that a pile-up of stressors or demands was associated with a lack or depletion of personal, intrafamily, and extended family resources. There was no relationship, however, between the pile-up measure of severity of handicap and other resource, coping, or family functioning variables. This was quite consistent with other research (Bristol, 1987; Trute & Hauch, 1988a) which found global severity measures to have little relationship to family adaptation. It may also be consistent with literature described in Chapter II (Blacher, 1984, p. 22; Bristol, 1979) which suggested that child-specific characteristics such as temperament or activity level were more apt to affect parental response than were general diagnostic labels or a global assessment of severity. There existed a strong negative relationship between parenting stress scores and SSI Spouse scores suggesting that affective support from their husbands was crucial to mothers functioning well in their parenting roles. This, too, is quite consistent with previous findings (Friedrich, 1979). Positive correlations between the LES scores and the Parent Domain scores of the PSI suggested that high number of demands facing the mothers, in addition to those associated directly with the special needs of the child, may also be reflected in their personal well-being and functioning within their parenting roles. In addition, LES negative scores were negatively correlated with FAM scores suggesting that changes and events taking place in the family perceived as being negative were associated with problems in overall family functioning. Also associated with a greater number of events or changes occurring within the family were mothers' reports of greater coping efforts directed toward developing supportive social relationships, caring for their own psychological and physical health, and acquiring knowledge of their child's special needs. It was hypothesized that as the demands facing the mothers increased, more behaviors directed at dealing with these demands were required and were being undertaken. Both LES total scores and PSI Total scores were positively correlated with SSI Professionals, SSI Community groups, and SSI Special Groups scores suggesting that one of the coping strategies employed by the mothers might be to seek out external sources of support when personal and intrafamily resources were lacking or depleted. This would appear to be very consistent with the work of Trute and Hauch (1988b). These researchers suggest that one of the key characteristics of the mothers in families demonstrating positive adaptation to the demands of raising a handicapped child is their success in developing and utilizing a strong social support network. Overall, in keeping with the T-Double ABCX Model, a pile-up of demands appeared to be associated with a lack or depletion of family resources, maternal stress, some difficulties in family functioning, increased coping efforts, and reports of greater support from external sources.

A strong negative relationship also existed between FIRM scores and FAM scores suggesting that a lack or depletion of resources was, in turn, strongly associated with difficulties in overall family functioning. This, too, appeared to be quite consistent with the T-Double ABCX Model.

Higher SSI Total scores were also generally associated with greater maternal coping efforts, less maternal stress, as reflected in the Parent Domain scores of the PSI, and generally better perception by mothers of their own functioning as reflected in the FAM Self-Rating scores. Again, the potential importance of the social support dimension was suggested.

The correlational trends associated with the father sample were, in many respects, similar to these of the mother sample. A pile-up of demands, emanating from either the special needs of the child or from other events or changes affecting the fathers, generally appeared to be associated with a lack or depletion of personal, intrafamily, and extended family resources, as well as with some difficulties in various aspects of overall family functioning. In the case of the fathers, poorer coping efforts also appeared to be quite consistently associated with greater parenting stress, a greater number or severity of negative life events, and fewer available resources. This trend appeared to be somewhat different than that which was evident in the mother sample. Mothers, for example, reported greater coping efforts when demands from life events and changes were higher. Fathers also appeared to experience a greater sense of social isolation under conditions of higher personal stress, especially from external sources of support such as friends, relatives, and co-workers. Mothers, on the other hand, appeared to experience greater emotional support from external sources when demands were higher, possibly reflecting their greater predisposition to seek assistance from these sources when their personal and intrafamily resources were insufficient. Fathers did, however, appear to receive greater support from special groups, professionals, and their children's educational programs when child-related demands were higher. As in the case of the mothers, less perceived emotional support from their spouses was associated with greater paternal and family stress, as indicated by the Parent Domain scores on the PSI and the FAM scores. Spousal support appeared to be a significant resource facilitating the personal functioning of both husbands and wives in their parenting and family roles. As in the mother sample, there was a strong relationship between FIRM scores and paternal reports of family functioning. In general, as would be predicted by the T-Double ABCX Model, fathers' reports of greater personal, intrafamily, and social resources were associated with better family functioning.

Overall, the correlational trends associated with the father data were quite consistent with those found for the mother sample. There were, however, some mother-father differences in the correlations. These appeared to be associated primarily with the social support and coping variables. Fathers appeared to receive less support from external sources such as friends and co-workers when personal stress was higher, whereas mothers appeared to receive more. When personal stress was higher mothers reported engaging in more of the CHIP coping behaviors including seeking out sources of support. In the case of the fathers, there appeared to be either little relationship or a negative relationship between personal stress and the various CHIP coping behaviors. There were also some correlational differences between the fathers and mothers with respect to the FAM scale. Most notably, mothers' satisfaction with the overall level of family functioning appeared to be more closely tied to their satisfaction with their spouses' role performance and task accomplishment than was the case for fathers. This was interesting in that it might again indicate that the issue of roles and role restriction is particularly salient to mothers and may need to be further addressed in future research.

While the differences between the mother and father correlations could not be fully explicated they did suggest some interesting hypotheses. The differences were also sufficient to warrant treating the samples separately within the regression analyses.

The orthogonal regression analysis served as a more direct test of the T-Double ABCX Model of Family Adaptation. In addition to the regression analyses employed to predict Family Adaptation (i.e., the FAM means) from the combined Pile-up, Resources, and Coping dimensions, three additional sets of analyses were conducted to examine the roles of these dimensions independently in predicting FAM means. The predictor variables employed in the full model analyses were: the total scores on the PSI; the total scores on the LES; the total scores on the FIRM; the Program Support score; and the total scores on the CHIP. The Pile-up dimension variable Severity of Intellectual Handicap, and the Resource Dimension variable SES were uncorrelated with FAM scores and were not included in the regression analyses. The failure to find a relationship between these variables and family adaptation was consistent with the findings of Bristol (1987), and Trute and Hauch (1988a).

The first partial model examined the contribution of the Pile-up dimension alone to the variability in FAM scores. The predictor var[illegible]es were: the PSI Parent Domain Total scores; the PSI Child Domain Total scores; and the LES Total scores. The second partial model examined the contribution of the Resources dimension alone. The predictor variables were: the total scores from the FIRM; the total SSI scores; and the Program Support scores. The third partial model examined the contribution of the Coping dimension alone to the variability in FAM scores. The predictor variables were the scores on the Coping Patterns I, II, and III of the CHIP.

Overall, the results of the regression analyses provided evidence for the importance of the Pile-up, Coping, and Resources dimensions of the T-Double ABCX Model in predicting family adaptation in the face of the many demands inherent in raising a child with significant handicaps. The full model accounted for 77% of the variance in the FAM General Scale for mothers, and 59% of the variance in the FAM General Scale for fathers. The full model more accurately described the mother data than the father data. The multiple R's in the father sample did not reach statistical significance although the multiple R for the General Scale did approach significance.

In the case of the mothers, only the PSI did not explain some of the variance in the FAM General Scale when the full and partial models were considered together. The multiple R's for the Pile-up dimension did not reach statistical significance primarily due to the negligible effect of the parenting stress scores on the variance of the FAM scores. The correlational data on the mother sample, however, indicated that the parenting stress scores were inversely related to the FIRM scores, CHIP I scores, SSI Husband, SSI Children, and SSI Relatives scores suggesting that the role of parenting stress for mothers was also likely important but had a less direct relationship with family adaptation as measured by the FAM. In the case of the fathers, all the variables appeared to be important in explaining some of the variance in the FAM

General Scale when both the full and partial models were considered despite the fact that the total amount of variance explained was less.

As suggested by the correlational analyses, the Coping variables (i.e., CHIPTOT, CHIP I, II, III) behaved somewhat differently in the mother and father regression equations. In the full model equations, the regression weight of the CHIPTOT variable was small and positive for mothers, and was larger and negative for the fathers. The corresponding partial models revealed some notable differences between the mother and father samples with respect to the three coping patterns. The role of the Coping dimension was less clear in the father sample. Firstly, the role of the coping dimension was more important in explaining scores on the General Scale for mothers than for fathers. The three coping patterns explained 41% of the variance in the FAM General Scale for mothers and 19% of the variance for fathers. All three coping patterns contributed to the variance in the General, Dyadic, and Self-Rating Scales for mothers. Coping patterns I and II, only, explained some of the variance in the General Scale for fathers. Coping Pattern I, only, made a contribution to the variability in the Dyadic Scale. Coping Pattern II, only, contributed to the variability in the Self-Rating Scale. Furthermore, the signs were positive for the regression weights of the CHIP II and III Coping Patterns for the mothers and negative for these patterns in the father equations. The CHIP II coping pattern involves efforts to maintain social support, self esteem, and psychological stability. The CHIP III coping pattern assesses parental efforts to gain an understanding of their child's special needs through communication with other parents of handicapped children, and through consultation with medical staff. As suggested by the correlational analyses, it appeared that the mothers were more apt to seek out external sources of social support when family resources were less plentiful. This did not seem to be a predominant coping strategy employed by fathers.

The differences that were suggested by the correlational analyses in the way that mothers and fathers may experience their social networks were not revealed as clearly in the regression analyses. The fact that the total score on the SSI was used in the regression analyses may have obscured some more subtle differences. The correlational analyses seemed to suggest that the mothers and fathers tended to experience their intrafamily support similarly but may experience their community networks differently. This would certainly appear to be a fruitful area for further research.

Finally, the regression equations produced for the FAM General, Dyadic, and Self-Rating Scales were very similar for mothers. In the case of fathers, however, the regression equations across the FAM Scales were less consistent. This result is not easily explained. It may be that the mothers tended to view their family functioning more globally than did fathers. The same factors which contribute to the mothers' view of the overall level of family functioning also generally contributed to their level of satisfaction with their own and their spouses' functioning. Fathers, on the other hand, may see different factors as affecting the various aspects of their own, their spouses', and the overall level of family functioning.

Overall, the results of the study would suggest that the T-Double ABCX Model of Adaptation holds promise as a means of guiding and coordinating further inquiry into the adaptive process of families raising handicapped children. The full model was a particularly good fit to the mother data. Stressor pile-up, family resources, social supports, and parental coping efforts would all appear to be relevant in determining how well a family is able to manage in the face of the many and varied demands of raising a child with significant special needs. The significance of the Appraisal and Family Typology dimensions, of course, could not be evaluated. It was evident that the severity of child-related stress alone cannot predict the adaptive capacity of the family. While virtually all of the parents in the sample reported high levels of child-related stress, many were apparently functioning very well in their parenting and other family roles. The fact that the number and/or severity of life events facing the families appeared to be strongly related to the personal functioning of both mothers and fathers, and to the overall level of family functioning, would suggest that we can no longer restrict our view to only those demands associated with the special needs of the child. It is clear that families experiencing a high level of other demands or stressors will be at a much higher risk for significant problems. The importance of family system resources and social supports also cannot be understated. Although we still have a very limited understanding of the complexities of these dimensions, their general contribution to the overall level of functioning in the sample of families participating in this study was unequivocal. There was evidence that parental coping efforts were also important in determining the adaptive process of these families. It is also clear, however, that much more research will be required before we truly understand the complexity of this dimension, particularly with respect to the differences between husbands and wives. One coping strategy which this research suggested might be particularly important, is the parents' capacity to establish and utilize a strong social support network. This finding was consistent with the work of Trute and Hauch (1988b) and is certainly worthy of further inquiry since the implications for intervention are considerable.

The results of this investigation were consistent with the findings of Bristol (1987). Bristol employed a number of the dimensions of the double ABCX Model to predict successful adaptation in a sample of mothers raising children with autism or communication disorders. As in the current investigation, she examined the pile-up, intrafamily resources, social support, and coping dimensions. In addition, she also employed two measures of maternal appraisal (i.e., the mother's tendency to blame herself for the child's disabilities, and the mother's tendency to view the child's condition as a family catastrophe). Appraisal was not examined as an independent dimension in the current investigation. Bristol employed different measures of the pile-up, intrafamily resources, social supports, and family adaptation than were used in this investigation. She did, however, employ the CHIP to assess maternal coping. Despite the differing measures, Bristol obtained results that were generally consistent with those reported here and also concluded that the Double ABCX Model was useful in conceptualizing the process of adaptation in families of autistic or communication impaired children. Furthermore, Bristol found that the appraisal measures were significant predictors of family adaptation in her sample of mothers, suggesting that this dimension is also important. The consistency between the Bristol results and the results reported here would appear to further attest to the robustness of the T-Double ABCX Model and make it worthy of further attention by researchers and clinicians attempting to understand and assist families in their efforts to raise children who have significant special needs. In the following sections the limitations of the research described here will be discussed and some directions for further research will be provided.

6.3 Limitations of the Study

As stated earlier, with a sample size of 16 the confidence intervals around the means and correlations are wide, hence caution must be exercised in generalizing the results. In addition, there may have been some inherent biases emerging as a result of the sampling procedure whereby parents willing to participate responded to a written request sent home by their child's teacher. Because there were no direct gains to the families for participation, it might be hypothesized, for instance, that the families willing to volunteer might have favored relatively better functioning families. Such parents likely would have been better able to cope with the extra emotional and time demands created by their participation. Furthermore, the demographic information obtained indicated that the sample was not a representative cross-section of families with respect to socioeconomic status, or the age and educational level of parents. In general, the families were from middle class backgrounds and the parents were well educated. No families with very young parents were included in the study. No attempt was made to examine the adaptive process of single parent families. Overall, the sample families generally had a number of strengths (i.e., education, income, maturity, spousal presence) not directly associated with particular adaptive skills. It would be important to include less fortunate families in future research. Finally, the children in the study were all preschool aged and had moderate to severe intellectual handicaps. Generalizations cannot be made directly to families with younger or older children, or children not having intellectual handicaps. In spite of these clear limitations in the sampling procedure, however, the data obtained on the CHIP and FIRM were very consistent with the normative data on these instruments obtained from large samples of families having children with a variety of handicapping conditions. This would suggest that the current sample was not that different from other families raising children with significant special needs on two of the more critical dimensions and, potentially, on others as well.

In addition to the limitations posed by the sample, several other procedural limitations are also worthy of note. Firstly, the results were highly dependent upon the accuracy of the FAM III as a measure of Family Adaptation. It would be important to confirm the results using alternate measures of family functioning (e.g., observational, clinical judgment, other self-report measures). The same, of course, is true of the measures of the other dimensions of the T-Double ABCX Model. However, the fact that Bristol (1987) also found good support for the Double ABCX Model employing different measures would suggest that the results obtained here are significant and were not unduly influenced by the measures employed.

Secondly, it was not possible within the context of this single study to assess all of the dimensions of the T-Double ABCX Model. Family Typology (T Factor) and Family Appraisals (CC and CCC Factors) were not assessed independently here. It would be important to examine these dimensions in future research.

Thirdly, the husbands and wives were instructed to complete independently each of the self-report measures, with the exception of the FIRM. This could not be assured, however, given that the parents were left the materials and requested to complete them on their own time. If the parents did not comply with the request not to discuss the forms with their spouses, this may have obscured some mother/father differences, and may have somewhat limited the degree of parental self-disclosure. The relatively high degree of social desirability response bias evident in the fathers' FAM profiles also cannot be ignored.

Finally, the study examined families at only one point in time. It does not assess the dynamic pattern of adaptation over time. A longitudinal or cross-sectional design would be required to accomplish this. In addition, siblings have not been included in the current study. The way in which siblings adapt to the demands of having a handicapped brother or sister is a critical part of the process which needs to be addressed in future research.

In light of the findings and limitations of the work presented here, the final section of the dissertation will provide some directions for further research.

6.4 Directions for Future Research

Considerable scope exists for expanding and refining this promising area of inquiry into the adaptive process of families raising children with handicaps. As implied in the previous section, it will be necessary to examine a broader sample of families in general, as well as families at different life stages (e.g., birth of the child, preschool years, childhood, adolescence, post-adolescence). This will enhance our understanding of the way the adaptive process unfolds over time with the changing needs of the child and the family. Longitudinal studies would be most ideally suited to this purpose.

It will also be important to assess other dimensions of the T-Double ABCX Model such as Family Type and Family Appraisals which were not examined here. The work of Bristol (1987) suggested that the appraisal process is likely to be significant in determining how a family functions in the face of the demands of raising a child with handicaps. Related to this is the critical need to examine each of the dimensions of the T-Double ABCX Model much more intensively. While evidence is strong, for example, that parental coping efforts and social supports are two crucial elements in the adaptive process, our understanding of these dimensions, and how they function is truly in its infancy. As discussed in Section 2.3.3.4 of Chapter II, the complexity involved in researching the social support dimension alone is overwhelming. The same can be said with respect to parental coping or any other dimension of the model. The research efforts of Kazak and Marvin (1984), and Trute and Hauch (1988b) have made significant contributions to our understanding of the social support networks of families raising handicapped children, and represent the type of intensive work on a single dimension which needs to be further undertaken.

Further research must also continue to maintain a family system perspective. No longer will it be appropriate to view the responses of a single family member (i.e., the mother) as representative of the adaptive functioning of the family system as a whole. Evidence obtained here and elsewhere of some important mother/father differences illustrates the importance of examining the responses of all family members, including siblings. The development of measures appropriate to the assessment of the appraisals, coping responses, and support networks of children and adolescents would greatly facilitate this goal.

Finally, as our understanding of the various factors involved in the adaptive process grows, intervention strategies can then be developed to target these dimensions. For example, a greater understanding of the functioning of the social support network would allow for the development of intervention strategies designed to assist families whose problems appear to lie in this area. Families who have failed to establish a comprehensive helping network could be assisted to do so. Similarly, intervention efforts might be directed towards improving or expanding parental coping responses or to altering faulty or maladaptive appraisals.

Overall, the work that remains to be done in order to understand and maximally assist families rearing handicapped children will not be accomplished by one or even a few research studies. Many coordinated efforts will be required to tackle the problem on its various fronts. A very promising foundation for this work, however, appears to be provided by the T-Double ABCX Model of Family Adaptation.

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APPENDIX I

CORRELATIONS BETWEEN SUBSCALES FOR MOTHERS AND FATHERS AND STATISTICAL SIGNIFICANCE OF DIFFERENCE BETWEEN CORRELATIONS FOR MOTHERS AND FATHERS

Table AI.1

Description of Abbreviations Used in Tables AI.2, AI.3, and AI.4

	Label	Description
1	PARAGE	Parental Age
2	EDUC	Parental Education
3	INCOME	Parental Income
4	CHIAGE	Child Age
5	BORDER	Birth Order
6	IDELAY	Extent of Intellectual Delay (in months)
7	DIANEU	Neurological Impairment (present/absent/unknown)
8	DIAPYS	Physical Impairment (present/absent)
9	LESTOT	Life Experiencies Survey (LES) Total
10	LESNEG	LES Negative Life Events
11	LESPOS	LES Positive Life Events
12	PSITOT	Parenting Stress Index (PSI) Total
13	CHITOT	PSI Child Domain Total
14	PSIADA	PSI Adaptability
15	PSIACC	PSI Acceptability
16	PSIDEM	PSI Demandingness
17	PSIMOD	PSI Mood
18	PSIDIS	PSI Distractability/Hyperactivity
19	PSIREI	PSI Reinforces Parent
20	PARTOT	PSI Parent Domain Total
21	PSIDEP	PSI Depression

22	PSIATT	PSI Attachment
23	PSIRES	PSI Restriction of Role
24	PSICOM	PSI Sense of Competence
25	PSIISO	PSI Social Isolation
26	PSISPO	PSI Spousal Relationship
27	PSIHEA	PSI Parent Health
28	SES	Family Socieconomic Status
29	FIRMTOT	Family Inventory of Resources (FIRM) Total
30	FIRFSI	Family Strengths I: Esteem/Communication
31	FIRFSII	Family Strengths II: Mastery Health
32	FIRSS	Extended Family Social Support
33	FIRFWB	Financial Well-being
34	FIRSD	Social Desirability
35	SSITOT	Social Support Inventory (SSI) Total
36	SSISPO	Support from Spouse
37	SSICHI	Support from Children
38	SSIREL	Support from Relatives
39	SSIFRD	Support from Friends
40	SSICWR	Support from Co-workers
41	SSICHR	Support from Church/Synagogue
42	SSISFA	Support from Spiritual Beliefs
43	SSICGR	Support from Community Groups
44	SSIPRO	Support from Professionals
45	SSISPGR	Support from Special Groups
46	SSITV	Support from TV/Books/Music
47	PSUPTOT	Program Support Total
48	CHIPTOT	Coping Health Inventory (CHIP) Total

49	CHIPI	Coping I: Integration/Cooperation/Optimism
50	CHIPII	Coping II: Support/Esteem/Stability
51	CHIPIII	Coping III: Medical Understanding
52	FAMGMEA	Family Assessment Measure (FAM) Mean (G Scale)
53	FAMGVN	FAM Values and Norms (G Scale)
54	FAMGCON	FAM Control (G Scale)
55	FAMGINV	FAM Involvement (G Scale)
56	FAMGAE	FAM Affective Expression (G Scale)
57	FAMGCOM	FAM Communication (G Scale)
58	FAMGRP	FAM Role Performance (G Scale)
59	FAMGTA	FAM Task Accomplishment (G Scale)
60	FAMGDEF	FAM Defensiveness (G Scale)
61	FAMGSD	FAM Social Desirability (G Scale)
62	FAMDMEA	Family Assessment Measure (FAM) Mean (D Scale)
63	FAMDVN	FAM Values and Norms (D Scale)
64	FAMDCON	FAM Control (D Scale)
65	FAMDINV	FAM Involvement (D Scale)
66	FAMDAE	FAM Affective Expression (D Scale)
67	FAMDCOM	FAM Communication (D Scale)
68	FAMDRP	FAM Role Performance (D Scale)
69	FAMDTA	FAM Task Accomplishment (D Scale)
70	FAMSMEA	Family Assessment Measure (FAM) Mean (S-R Scale)
71	FAMSVN	FAM Values and Norms (S-R Scale)
72	FAMSCON	FAM Control (S-R Scale)
73	FAMSINV	FAM Involvement (S-R Scale)
74	FAMSAE	FAM Affective Expression (S-R Scale)
75	FAMSCOM	FAM Communication (S-R Scale)

76 FAMSRP   FAM Role Performance (S-R Scale)

77 FAMSTA   FAM Task Accomplishment (S-R Scale)

Table AI.2

Correlations Between Subscales in the Mother Sample

1	PARAGE	1.00															
2	EDUC	.19	1.00														
3	INCOME	.18	.42	1.00													
4	CHIAGE	.02	-.42	.04	1.00												
5	BORDER	.41	-.01	.12	.05	1.00											
6	IDELAY	-.08	.01	-.11	.08	-.20	1.00										
7	DIANEU	.45*	.29	-.02	.01	.55**	-.13	1.00									
8	DIAPYS	.74***	.04	.07	.20	.33	-.35	.59**	1.00								
9	LESTOT	.07	-.48*	-.41	.17	.40	-.04	.06	-.00	1.00							
10	LESNEG	-.06	-.36	-.33	-.10	.12	.21	-.13	-.31	.54**	1.00						
11	LESPOS	.12	-.36	-.28	.26	.40	-.17	.15	.18	.86***	.04	1.00					
12	PSITOT	.35	.38	.14	-.26	.64***	.11	.49*	.26	.33	.12	.32	1.00				
13	CHITOT	.62***	.50**	.16	-.30	.34	.05	.37	.49*	.05	-.10	.12	.81***	1.00			
14	PSIADA	.54**	.40	.44*	-.36	.25	.26	.26	.25	-.08	-.01	-.10	.68***	.79***	1.00		
15	PSIACC	.52**	.66***	.28	-.38	.13	.06	.29	.36	-.09	-.02	-.10	.72***	.91***	.75***	1.00	
16	PSIDEM	.48*	.39	-.01	-.15	.58**	.09	.59**	.46*	.26	.08	.26	.82***	.78***	.43*	.68***	1.00
17	PSIMOD	.15	.37	.03	-.44*	-.02	-.09	.03	.25	.01	-.07	.05	.61**				

	.73***	.51**	.80***	.45*	1.00	
18 PSIDIS	.66***	.34	-.05	-.16	.38	-.06
	.41	.54**	.11	-.25	.28	.57**
	.84***	.55**	.60**	.69***	.41	1.00
19 PSIREI	.60**	.24	.14	-.00	.23	-.05
	.08	.46*	.01	-.22	.15	.49*
	.80***	.57**	.65***	.46*	.56**	.74***
	1.00					
20 PARTOT	-.02	.13	.07	-.13	.70***	.13
	.43*	-.05	.47*	.27	.39	.84***
	.35	.34	.29	.57**	.29	.12
	.04	1.00				
21 PSIDEP	.07	-.24	-.29	.33	.32	.06
	.14	.06	.81***	.19	.85***	.41
	.16	.04	-.01	.23	.09	.23
	.18	.49*	1.00			
22 PSIATT	.48*	.17	-.34	-.16	.29	-.04
	.50**	.50**	.41	-.17	.59**	.50**
	.61**	.31	.39	.61**	.34	.81***
	.38	.23	.52**	1.00		
23 PSIRES	.38	-.14	-.25	-.03	.47*	-.01
	.34	.35	.68***	.39	.57**	.74***
	.68***	.46*	.51**	.67***	.52**	.58**
	.52**	.55**	.59**	.60**	1.00	
24 PSICOM	-.13	-.23	-.59**	.10	.13	-.16
	-.05	.08	.58**	.33	.49*	.18
	.10	-.33	-.01	.32	.22	.23
	.05	.20	.56**	.43*	.47*	1.00
25 PSIISO	.27	-.02	.04	-.32	.44*	.30
	.02	-.05	.47*	.52**	.25	.62**
	.42	.54**	.40	.39	.36	.17
	.18	.59**	.25	.18	.54**	.04
	1.00					
26 PSISPO	.24	-.14	-.11	-.25	.47*	.25
	.20	.09	.55**	.59**	.30	.77***
	.54**	.57**	.48*	.54**	.50**	.23
	.30	.72***	.41	.26	.81***	.23
	.78***	1.00				
27 PSIHEA	.12	.11	-.23	-.32	.56**	.16
	.29	.02	.54**	.18	.53**	.83***
	.61**	.46*	.40	.64***	.46*	.56**
	.42	.75***	.57**	.61**	.74***	.38
	.60**	.70***	1.00			

28 SES	.44*	.53**	.68***	-.02	.06	-.03
	.32	.37	-.48*	-.15	-.48*	.23
	.32	.46*	.54**	.21	.21	-.01
	.20	.07	-.34	-.23	-.12	-.51**
	-.03	.08	-.30	1.00		
29 FIRMTOT	-.10	.28	.12	.16	-.46*	-.13
	.01	.04	-.69***	-.59**	-.46*	-.63***
	-.39	-.31	-.31	-.49*	-.40	-.14
	-.27	-.64***	-.39	-.15	-.77***	-.29
	-.76***	-.88***	-.66***	.14	1.00	
30 FIRFSI	-.27	-.00	.01	.41	-.31	-.17
	.03	-.14	.04	-.41	.30	-.44*
	-.46*	-.42	-.46*	-.42	-.46*	-.18
	-.34	-.27	.30	.09	-.36	-.03
	-.62**	-.63***	-.32	-.19	.58**	1.00
31 FIRFSII	-.34	.14	-.14	.06	-.59**	-.14
	-.23	-.14	-.63***	-.53**	-.42	-.72***
	-.46*	-.50**	-.40	-.56**	-.29	-.19
	-.30	-.71***	-.40	-.17	-.74***	-.07
	-.78***	-.88***	-.60**	-.15	.91***	.50*
	1.00					
32 FIRSS	.14	-.11	.04	.37	-.09	.12
	.29	.09	.00	-.18	.11	-.07
	-.10	.16	-.10	-.26	-.21	-.04
	-.05	-.02	.29	.09	.02	-.31
	-.29	-.04	-.17	.23	.28	.53**
	.10	1.00				
33 FIRFWB	.28	.48*	.43*	.02	-.11	-.08
	.25	.31	-.74***	-.43*	-.62***	-.30
	-.07	.07	.03	-.14	-.28	.00
	-.08	-.40	-.54**	-.17	-.62**	-.45*
	-.37	-.57**	-.53**	.53**	.77***	.12
	.52**	.04	1.00			
34 FIRSD	-.40	.30	.25	.07	-.20	-.18
	.06	-.17	-.56**	-.63***	-.28	-.41
	-.46*	-.31	-.42	-.47*	-.37	-.28
	-.41	-.22	-.23	-.21	-.74***	-.29
	-.61**	-.75***	-.38	.03	.83***	.61**
	.74***	.20	.60**	1.00		
35 SSITOT	.01	-.13	.14	.26	.33	-.04
	.03	-.14	.45*	.06	.50**	.02
	-.19	-.22	-.32	.11	-.50**	-.04
	-.08	.21	.41	.05	.02	.08
	-.08	-.05	.13	-.13	-.18	.38
	-.28	-.00	-.19	-.01	1.00	
36 SSISPO	-.36	-.11	.06	.27	-.11	-.21

	-.10	-.28	.02	-.29	.20	-.52**
	-.70***	-.56**	-.71***	-.56**	-.66***	-.45*
	-.53**	-.17	.20	-.18	-.59**	-.08
	-.49*	-.62**	-.33	-.22	.53**	.80***
	.45*	.25	.22	.71***	.54**	1.00
37 SSICHI	-.31	-.40	.18	.21	.20	.01
	-.27	-.33	.33	.11	.32	-.24
	-.59**	-.42	-.63***	-.27	-.55**	-.54**
	-.50**	.17	.17	-.33	-.31	-.05
	.07	-.09	-.11	-.20	-.16	.22
	-.18	-.16	-.17	.12	.71***	.61**
	1.00					
38 SSIREL	-.22	-.36	.12	.24	-.02	-.17
	-.13	-.17	-.17	-.16	-.11	-.41
	-.53**	-.37	-.55**	-.44*	-.47*	-.47*
	-.23	-.17	-.18	-.50**	-.39	-.34
	-.52**	-.26	-.42	.12	.17	.25
	.16	.37	-.03	.23	.37	.43*
	.44*	1.00				
39 SSIFRD	-.02	-.15	.27	.17	.13	-.48*
	-.15	.07	.17	-.21	.33	-.19
	-.25	-.40	-.28	-.06	-.23	-.19
	-.05	-.07	.04	-.16	-.17	.00
	-.31	-.25	-.22	.06	-.07	.27
	-.07	-.14	-.13	.04	.71***	.44*
	.65***	.58**	1.00			
40 SSICWR	.18	.19	.34	.00	-.03	.10
	.06	.16	.12	-.29	.32	.09
	.16	.19	.12	.22	-.05	.27
	-.11	-.01	.14	.45*	.00	-.01
	.08	-.13	.04	.02	.08	.33
	-.03	-.00	.10	.08	.32	.17
	.25	-.29	.22	1.00		
41 SSICHR	.37	.11	.23	.24	.68***	-.11
	.44*	.28	.22	-.08	.31	.45*
	.33	.26	.10	.40	-.15	.40
	.48*	.41	.37	.18	.33	-.02
	.06	.19	.44*	.13	-.20	.02
	-.41	.06	.06	-.02	.57**	.11
	.12	.11	.23	-.10	1.00	
42 SSISFA	.04	.20	.03	.24	.30	.17
	.07	-.16	.35	.24	.28	.32
	.15	-.00	.11	.31	-.09	.10
	.29	.36	.46*	.00	.22	.20
	.15	.16	.37	-.01	-.29	.07
	-.37	-.16	-.15	-.15	.60**	.14
	.19	-.10	.18	-.15	.70***	1.00

43 SSICGR	.50**	-.15	-.10	.21	.44*	.22
	.29	.20	.43*	.07	.46*	.16
	.20	.15	-.08	.38	-.43*	.50*
	.23	.08	.34	.48*	.31	.03
	.16	.10	.32	-.22	-.19	.12
	-.32	.09	-.08	-.27	.64***	.09
	.23	-.01	.17	.38	.56**	.37
	1.00					
44 SSIPRO	.01	.16	-.25	-.23	.30	.18
	.10	-.24	.39	.34	.25	.43*
	.29	-.01	.24	.58**	.12	.23
	.17	.42	.18	.19	.40	.27
	.23	.38	.50**	-.13	-.57**	-.24
	-.46*	-.29	-.52**	-.49*	.46*	-.25
	.11	.04	.26	-.06	.27	.53**
	.38	1.00				
45 SSISPGR	-.05	-.32	-.31	.14	-.03	.24
	-.22	-.25	.60**	.51**	.41	-.15
	-.25	-.31	-.31	.07	-.42	-.07
	-.29	-.01	.41	.18	.12	.47*
	.11	.07	.08	-.41	-.23	.20
	-.19	-.17	-.31	-.30	.65***	.27
	.50**	-.06	.27	.39	.02	.35
	.55**	.40	1.00			
46 SSITV	-.05	.17	.15	-.06	.14	-.15
	.09	-.17	.38	.40	.21	.41
	.28	.24	.33	.27	.21	.09
	.27	.38	.36	.00	.49*	.17
	.13	.39	.36	.13	-.45*	.03
	-.51**	.02	-.37	-.31	.39	-.10
	-.06	-.04	.16	-.13	.48*	.64***
	.09	.47*	.20	1.00		
47 PSUPTOT	-.24	-.59**	-.38	.61**	.21	-.23
	-.02	.03	.51**	.21	.47*	-.08
	-.30	-.52**	-.37	-.07	-.11	-.19
	-.15	.14	.39	-.05	.28	.47*
	-.03	.06	-.01	-.42	-.24	.13
	-.09	.09	-.50**	-.18	-.01	.03
	.13	.10	.09	-.26	-.07	.01
	-.08	.00	.06	-.02	1.00	
48 CHIPTOT	-.19	-.40	-.23	.58**	.19	.07
	-.06	-.16	.62**	.41	.49*	-.06
	-.27	-.43	-.38	.11	-.45*	-.08
	-.19	.16	.56**	.05	.24	.59**
	-.10	.04	.10	-.39	-.21	.32
	-.19	-.02	-.35	-.16	.64***	.29
	.42	.06	.28	.14	.30	.52**
	.44*	.32	.75***	.37	.49*	1.00

49 CHIPI	-.41	-.37	-.14	.65***	.04	-.02
	-.11	-.28	.34	.14	.32	-.31
	-.53**	-.59**	-.62**	-.20	-.62***	-.27
	-.35	.00	.42	-.15	-.11	.40
	-.43*	-.30	-.14	-.37	.14	.58**
	.16	.16	-.15	.25	.60**	.58**
	.45*	.30	.31	.05	.26	.40
	.25	.09	.54**	.24	.48*	.89***
	1.00					
50 CHIPII	.11	-.16	-.22	.38	.17	.12
	.07	.08	.57**	.39	.44*	.07
	.03	-.23	-.05	.40	-.25	.22
	-.07	.08	.42	.33	.34	.60**
	.13	.07	.16	-.31	-.23	.13
	-.23	-.26	-.19	-.33	.45*	.01
	.19	-.40	.10	.41	.16	.42
	.54**	.33	.78***	.23	.31	.82***
	.56**	1.00				
51 CHIPIII	-.15	-.53**	-.19	.20	.32	.06
	-.15	-.23	.61**	.55**	.39	.24
	-.08	-.04	-.18	.04	-.04	-.20
	.07	.46*	.53**	-.15	.46*	.32
	.21	.58**	.34	-.16	-.65***	-.15
	-.58**	.15	-.69***	-.47*	.43*	-.02
	.35	.42	.26	-.37	.34	.39
	.13	.41	.32	.52**	.37	.51**
	.39	.11	1.00			
52 FAMGMEA	.11	-.55**	-.22	.13	.11	.20
	-.12	.02	.51**	.75***	.15	.14
	.04	.15	.07	.04	.13	-.16
	.03	.19	.17	-.13	.51**	.14
	.65***	.63***	.14	-.12	-.66***	-.51**
	-.62**	-.11	-.45*	-.74***	-.21	-.51**
	-.01	-.27	-.30	-.25	-.13	.01
	.00	.01	.16	.15	.41	.16
	-.13	.24	.40	1.00		
53 FAMGVN	.20	-.62**	-.26	.23	.15	.14
	-.06	.13	.54**	.65***	.25	.08
	.00	.11	-.03	-.03	.04	-.13
	.08	.13	.26	-.07	.49*	.11
	.59**	.56**	.13	-.16	-.58**	-.40
	-.58**	-.01	-.40	-.67***	-.15	-.38
	.03	-.22	-.26	-.27	-.02	.05
	.09	-.09	.14	.10	.43*	.15
	-.10	.20	.39	.96***	1.00	
54 FAMGCON	.00	-.57**	-.22	.12	-.11	.43*
	-.36	-.27	.34	.72***	-.03	-.20
	-.24	.01	-.21	-.24	-.25	-.33
	-.15	-.09	-.00	-.32	.14	-.08

	.52**	.34	-.07	-.24	-.42	-.35
	-.38	-.12	-.29	-.55**	-.04	-.24
	.20	-.12	-.27	-.19	-.18	.06
	.17	-.00	.36	.00	.17	.18
	-.02	.23	.29	.85***	.83***	1.00
55 FAMGINV	.23	-.60**	-.20	.20	.14	.07
	-.11	.16	.45*	.68***	.12	.02
	.01	.08	.00	.03	.02	-.08
	.02	.02	.06	-.10	.46*	.16
	.54**	.49*	.00	-.12	-.54**	-.49*
	-.51**	-.13	-.34	-.71***	-.22	-.50*
	-.02	-.24	-.23	-.17	-.16	-.12
	.08	-.08	.18	.02	.45*	.18
	-.09	.31	.28	.95***	.92***	.81***
	1.00					
56 FAMGAE	.25	-.35	-.04	.05	.25	.11
	.00	.19	.43*	.46*	.24	.43*
	.38	.41	.36	.26	.44*	.13
	.31	.33	.17	.07	.68***	.06
	.72***	.72***	.34	-.01	-.74***	-.58**
	-.70***	-.08	-.51**	-.75***	-.32	-.70***
	-.19	-.35	-.29	-.13	-.06	-.08
	-.02	.04	-.14	.15	.38	-.06
	-.35	.08	.28	.87***	.83***	.58**
	.83***	1.00				
57 FAMGCOM	-.01	-.60**	-.30	.26	.01	.16
	-.14	.02	.56**	.73***	.22	.01
	-.15	-.10	-.08	-.03	.04	-.33
	-.15	.15	.24	-.17	.40	.26
	.51**	.51**	.02	-.15	-.57**	-.35
	-.52**	-.11	-.44*	-.64***	-.12	-.32
	.14	-.21	-.17	-.22	-.21	.05
	-.07	-.02	.28	.11	.51**	.29
	.03	.33	.40	.94***	.92***	.80***
	.89***	.74***	1.00			
58 FAMGRP	.01	-.43*	-.28	.09	.17	.17
	-.07	-.13	.62**	.85***	.22	.27
	.09	.13	.14	.15	.17	-.11
	.00	.35	.30	-.07	.63***	.29
	.63***	.70***	.28	-.17	-.73***	-.43
	-.66***	-.06	-.60**	-.75***	-.13	-.50**
	-.06	-.29	-.31	-.28	-.08	.15
	.00	.23	.23	.38	.48*	.31
	.01	.33	.52**	.93***	.85***	.73***
	.85***	.82***	.87***	1.00		
59 FAMGTA	.09	-.28	-.08	-.13	.17	.11
	.01	.11	.30	.65***	-.03	.40
	.28	.37	.34	.21	.46*	-.08
	.15	.38	.07	-.12	.57**	.13

	.67***	.78***	.29	.12	-.68***	-.71***
	-.66***	-.19	-.35	-.67***	-.40	-.68***
	-.20	-.32	-.38	-.35	-.08	-.04
	-.27	-.00	-.13	.25	.20	-.09
	-.35	-.01	.37	.87***	.79***	.58**
	.77***	.85***	.78***	.82***	1.00	
60 FAMGDEF	-.23	.36	.56**	.06	.07	-.22
	-.02	-.13	-.56**	-.62***	-.29	-.27
	-.33	-.22	-.30	-.25	-.37	-.20
	-.30	-.12	-.41	-.32	-.73***	-.40
	-.38	-.68***	-.36	.16	.60**	.34
	.49*	-.12	.60**	.81***	.16	.55**
	.34	.24	.30	.24	.08	-.08
	-.12	-.29	-.27	-.34	-.20	-.16
	.15	-.22	-.49*	-.67***	-.65***	-.49*
	-.59**	-.59**	-.63***	-.72***	-.63***	1.00
61 FAMGSD	-.38	-.00	.25	.38	-.19	-.07
	-.08	-.13	-.36	-.71***	.00	-.46*
	-.47*	-.40	-.54**	-.40	-.48*	-.19
	-.36	-.30	-.14	-.13	-.61**	-.23
	-.62**	-.76***	-.39	-.17	.65***	.69***
	.63***	.22	.31	.78***	.19	.65***
	.31	.34	.27	.38	-.07	-.22
	.02	-.36	-.10	-.42	.09	.09
	.43*	-.07	-.38	-.64***	-.57**	-.44*
	-.54**	-.57**	-.54**	-.67***	-.75***	.76***
	1.00					
62 FAMDMEA	.13	-.59**	-.18	.15	.14	.09
	-.14	.11	.53**	.62**	.25	.10
	.01	.05	.01	.04	.13	-.17
	.02	.15	.14	-.11	.46*	.12
	.64***	.55**	.11	-.16	-.67***	-.49*
	-.61**	-.22	-.46*	-.72***	-.14	-.45*
	.13	-.23	-.11	-.15	-.15	-.03
	.02	.00	.15	.05	.45*	.12
	-.17	.24	.32	.96***	.94***	.79***
	.93***	.87***	.93***	.83***	.80***	-.57**
	-.54**	1.00				
63 FAMDVN	.25	-.41	-.23	.15	.05	.04
	-.11	.17	.39	.56**	.12	-.05
	.03	-.07	.06	.13	.02	-.03
	.06	-.11	-.06	-.06	.34	.14
	.49*	.29	-.04	-.16	-.47*	-.44*
	-.42	-.39	-.25	-.68***	-.12	-.46*
	.00	-.36	-.10	-.08	-.15	.04
	.16	.09	.25	.00	.37	.16
	-.14	.44*	.04	.83***	.80***	.75***
	.88***	.71***	.81***	.71***	.59**	-.47*
	-.49*	.88***	1.00			

64 FAMDCON	.05	-.53**	-.19	.17	-.02	.18
	-.03	.16	.40	.59**	.12	.14
	.09	.16	.12	.08	.25	-.15
	.04	.15	.12	-.08	.53**	.12
	.49*	.60**	.09	-.04	-.60**	-.45*
	-.56**	-.03	-.44*	-.68***	-.30	-.56**
	-.11	-.24	-.28	-.18	-.19	-.11
	-.11	-.07	.04	.16	.39	.09
	-.16	.18	.33	.93***	.89***	.70***
	.88***	.87***	.90***	.84***	.87***	-.69***
	-.54**	.91***	.75***	1.00		
65 FAMDINV	.09	-.57**	-.09	.28	.15	.13
	-.20	.07	.50*	.59**	.23	.03
	-.11	-.09	-.07	.05	.01	-.29
	-.08	.15	.11	-.23	.32	.12
	.58**	.45*	-.01	-.09	-.62***	-.44*
	-.58**	-.28	-.40	-.66***	.01	-.33
	.32	-.14	.06	-.07	-.14	.05
	.04	.05	.26	-.01	.47*	.24
	-.04	.33	.33	.88***	.85***	.77***
	.87***	.75***	.91***	.75***	.69***	-.42
	-.42	.95***	.86***	.82***	1.00	
66 FAMDAE	.23	-.53**	-.19	-.02	.27	-.04
	-.10	.21	.41	.33	.30	.23
	.18	.22	.10	.04	.33	.05
	.25	.19	.13	.04	.50**	.04
	.65***	.58**	.27	-.19	-.64***	-.55**
	-.54**	-.12	-.49*	-.63***	-.32	-.50**
	-.03	-.16	-.16	-.24	-.11	-.23
	-.04	-.09	-.19	-.13	.41	-.21
	-.43	-.13	.27	.79***	.81***	.56**
	.77***	.88***	.67***	.64***	.72***	-.49*
	-.48*	.85***	.65***	.73***	.73***	1.00
67 FAMDCOM	.00	-.66***	-.14	.16	.15	-.01
	-.19	.01	.61**	.58**	.37	.01
	-.19	-.06	-.18	-.13	-.00	-.34
	-.14	.18	.24	-.17	.34	.09
	.60**	.47*	.08	-.23	-.62**	-.29
	-.58**	-.15	-.48*	-.56**	.03	-.16
	.37	-.10	.05	-.09	-.12	-.01
	.01	-.07	.23	.07	.46*	.17
	-.05	.19	.39	.87***	.89***	.76***
	.83***	.74***	.89***	.75***	.69***	-.45*
	-.41	.94***	.76***	.80***	.91***	.80***
	1.00					
68 FAMDRP	.10	-.42	-.04	.01	.17	.16
	-.15	-.03	.54**	.77***	.18	.27
	.14	.21	.19	.20	.20	-.14
	.06	.30	.14	-.15	.55**	.13
	.71***	.70***	.22	-.02	-.81***	-.56**

	-.78***	-.27	-.51**	-.81***	-.01	-.53**
	.13	-.25	-.08	-.10	-.05	.14
	.05	.22	.26	.34	.27	.21
	-.13	.31	.46*	.93***	.84***	.77***
	.86***	.84***	.87***	.89***	.85***	-.61**
	-.67***	.92***	.80***	.87***	.88***	.69***
	.84***	1.00				
69 FAMDTA	.10	-.65***	-.31	.19	.12	.07
	-.15	.11	.52**	.54**	.29	-.00
	-.10	-.05	-.12	-.07	.06	-.20
	-.02	.08	.18	-.08	.38	.14
	.59**	.45*	.09	-.28	-.55**	-.40
	-.47*	-.16	-.42	-.60**	-.20	-.33
	.13	-.22	-.17	-.22	-.17	-.08
	.01	-.11	.11	-.11	.52**	.08
	-.15	.18	.26	.91***	.95***	.79***
	.90***	.80***	.91***	.77***	.71***	-.53**
	-.45*	.96***	.84***	.84***	.90***	.88***
	.93***	.79***	1.00			
70 FAMSMEA	.31	-.35	-.16	.04	.25	-.08
	-.15	.14	.38	.62**	.07	.14
	.17	.15	.17	.09	.18	.07
	.18	.07	.05	-.05	.44*	.23
	.63***	.46*	.11	-.11	-.49*	-.58**
	-.44*	-.29	-.24	-.64***	-.34	-.53**
	-.16	-.41	-.31	-.27	-.11	-.04
	-.02	-.07	.04	.01	.40	.05
	-.22	.23	.16	.84***	.80***	.66***
	.89***	.77***	.73***	.78***	.72***	-.47*
	-.62**	.80***	.81***	.66***	.72***	.75***
	.69***	.74***	.80***	1.00		
71 FAMSVN	.20	-.18	-.21	.03	-.00	.11
	-.38	-.06	.36	.69***	.01	.10
	.22	.06	.29	.17	.25	.08
	.27	-.04	.08	-.09	.40	.41
	.50*	.41	.09	-.09	-.51**	-.55**
	-.38	-.43*	-.33	-.74***	-.17	-.56**
	-.17	-.42	-.19	-.23	-.15	.23
	-.00	.24	.31	.21	.26	.25
	-.07	.43*	.25	.70***	.61**	.61**
	.71***	.58**	.65***	.72***	.59**	-.56**
	-.69***	.64***	.74***	.53**	.63***	.46*
	.48*	.70***	.57**	.83***	1.00	
72 FAMSCON	.20	.01	.16	.06	.48*	-.10
	-.03	-.09	.08	.25	-.05	.04
	-.06	-.11	-.06	.16	-.27	.02
	-.13	.11	-.23	-.18	-.07	-.03
	.35	-.02	-.06	-.02	-.16	-.31
	-.17	-.39	.07	-.16	.09	-.11
	.24	-.10	.08	.02	.03	.05

	.22	.20	.11	-.20	.26	.14
	.03	.29	-.10	.20	.13	.24
	.33	.19	.12	.22	.02	.29
	-.03	.24	.42	-.05	.35	.20
	.19	.23	.23	.51**	.40	1.00
73 FAMSINV	-.01	-.65***	-.15	.04	.30	-.08
	-.22	-.02	.47*	.44*	.29	-.07
	-.25	-.15	-.32	-.13	-.14	-.25
	-.21	.12	.04	-.16	.17	.07
	.58**	.31	.08	-.39	-.50**	-.38
	-.41	-.37	-.35	-.41	.00	-.11
	.44*	-.09	.06	-.05	-.14	-.16
	.09	-.09	.18	-.23	.43*	.09
	-.08	.16	.20	.71***	.73***	.67***
	.75***	.61**	.69***	.55**	.51**	-.17
	-.22	.82***	.72***	.57**	.81***	.78***
	.88***	.67***	.86***	.70***	.40	.48*
	1.00					
74 FAMSAE	.42	-.08	-.13	-.22	.17	-.28
	.07	.25	.23	.43*	.01	.32
	.45*	.45*	.46*	.12	.48*	.31
	.43*	.09	.13	.16	.58**	.17
	.38	.54**	.22	.14	-.36	-.43*
	-.35	.13	-.22	-.54**	-.45*	-.57**
	-.57**	-.25	-.37	-.41	-.01	-.13
	-.16	-.07	-.24	.29	.13	-.21
	-.38	-.15	.25	.52**	.50**	.23
	.53**	.58**	.36	.57**	.62**	-.61**
	-.72***	.40	.31	.44*	.19	.54**
	.28	.42	.37	.68***	.54**	.04
	.15	1.00				
75 FAMSCOM	.32	-.28	-.11	.29	.18	-.03
	.08	.21	.31	.51**	.06	.14
	.15	.23	.18	-.01	.12	.04
	.20	.09	.22	-.04	.44*	.10
	.44*	.40	.04	.06	-.28	-.28
	-.36	.17	-.11	-.44*	-.39	-.40
	-.34	-.36	-.49*	-.37	.03	.05
	-.07	-.28	-.13	.14	.43*	.06
	-.10	.13	.18	.77***	.80***	.56**
	.77***	.71***	.69***	.74***	.68***	-.49*
	-.52**	.66***	.61**	.66***	.55**	.60**
	.57**	.58**	.69***	.84***	.61**	.23
	.41	.74***	1.00			
76 FAMSRP	.02	-.40	-.35	.02	-.02	-.09
	-.35	.00	.30	.54**	.03	-.17
	-.07	-.23	-.06	.00	.06	-.02
	-.06	-.20	-.10	-.06	.21	.44*
	.37	.14	-.05	-.40	-.31	-.45*
	-.11	-.58**	-.23	-.50*	-.29	-.39

	-.05	-.44*	-.19	-.11	-.37	-.15
	-.05	-.02	.27	-.17	.42	.20
	-.04	.44*	-.03	.65***	.58**	.59**
	.76***	.51**	.63***	.59**	.47*	-.33
	-.37	.68***	.82***	.52**	.60***	.53**
	.57**	.58**	.68***	.83***	.80***	.51**
	.68***	.34	.51**	1.00		
77 FAMSTA	.46*	-.11	.05	.00	.24	.08
	.11	.43*	.09	.28	-.06	.37
	.45*	.54**	.42	.19	.42	.24
	.42	.16	.05	.09	.45*	.00
	.62**	.53**	.23	.19	-.35	-.62**
	-.43*	-.10	.05	-.45*	-.54**	-.62**
	-.39	-.52**	-.55**	-.22	.06	-.08
	-.11	-.36	-.33	-.05	.07	-.28
	-.49*	-.06	-.01	.68***	.71***	.44*
	.67***	.75***	.54**	.52**	.78***	-.40
	-.57**	.63***	.53**	.65***	.50**	.70***
	.49*	.55**	.64***	.76***	.50**	.10
	.42	.64***	.79***	.44*	1.00	

Note. 2-tailed p-values, * p < .10, ** p < .05, *** p < .01.

Table AI.3

Correlations Between Subscales in the Father Sample

1 PARAGE	1.00																
2 EDUC	.39	1.00															
3 INCOME	.59**	.28	1.00														
4 CHIAGE	-.10	-.16	.04	1.00													
5 BORDER	.57**	-.03	.12	.05	1.00												
6 IDELAY	.01	.25	-.11	.08	-.20	1.00											
7 DIANEU	.40	.33	-.02	.01	.55**	-.13	1.00										
8 DIAPYS	.33	.18	.07	.20	.33	-.35	.59**	1.00									
9 LESTOT	-.43*	-.05	-.07	.01	-.26	-.17	-.56**	-.37	1.00								
10 LESNEG	-.03	.27	.05	.02	-.08	.06	-.38	-.30	.76***	1.00							
11 LESPOS	-.62**	-.42	-.17	-.00	-.30	-.34	-.37	-.17	.56**	-.12	1.00						
12 PSITOT	.40	.38	.02	-.13	.42	.42	.35	-.04	.12	.41	-.35	1.00					
13 CHITOT	.59**	.35	.08	-.20	.43*	.52**	.44*	.06	-.26	.13	-.56**	.90***	1.00				
14 PSIADA	.60**	.33	.35	.12	.47*	.47*	.41	.10	-.37	.03	-.60**	.65***	.78***	1.00			
15 PSIACC	.46*	.37	.10	-.18	.18	.53**	.29	-.13	-.13	.22	-.48*	.85***	.92***	.60**	1.00		
16 PSIDEM	.39	.18	-.12	.19	.52**	.30	.49*	.25	-.11	.24	-.47*	.83***	.81***	.58**	.76***	1.00	
17 PSIMOD	.29	.43*	-.05	-.42	.35	.38	.32	.00	-.01	.24	-.31	.72***					

```
                .67***  .25     .64***  .53**  1.00

18 PSIDIS       .67*** -.10     .07    -.24     .53**   .12
                .23     .30    -.54**  -.35    -.38     .22
                .48*    .42     .22     .24     .20    1.00

19 PSIREI       .49*    .37     .20    -.12     .12     .51**
                .16    -.06    -.03     .28    -.39     .79***
                .84***  .58**   .92***  .74***  .52**   .20
               1.00

20 PARTOT      -.05     .27    -.08     .03     .23     .11
                .08    -.18     .66***  .70***  .12     .75***
                .39     .19     .41     .53**   .51**  -.28
                .40    1.00

21 PSIDEP      -.19     .10    -.06    -.31    -.26    -.21
               -.23    -.28     .64***  .35     .54**   .22
               -.03    -.34     .14     .00     .06    -.30
                .23     .52**  1.00

22 PSIATT       .17    -.02    -.12     .00     .48*   -.27
                .42     .22     .09    -.09     .25     .44*
                .30     .03     .24     .46*    .27     .22
                .17     .49*    .49*   1.00

23 PSIRES       .16     .32    -.01     .15     .38     .13
                .46*    .22     .28     .46*   -.16     .80***
                .60**   .44*    .59**   .79***  .56**  -.18
                .58**   .80***  .17     .38    1.00

24 PSICOM      -.17    -.10    -.41     .11     .45*    .11
                .07    -.21     .44*    .39     .18     .61**
                .33     .14     .29     .58**   .38    -.08
                .26     .78***  .37     .61**   .59**  1.00

25 PSIISO       .08     .56**   .21    -.01    -.01     .29
               -.06    -.27     .54**   .79*** -.18     .60**
                .33     .25     .39     .27     .54**  -.32
                .33     .77***  .21     .01     .60**   .32
               1.00

26 PSISPO      -.09     .29    -.04     .01     .11     .28
               -.11    -.31     .60**   .83*** -.14     .61**
                .30     .18     .31     .41     .53**  -.33
                .32     .84***  .27     .07     .64***  .58**
                .85*** 1.00

27 PSIHEA      -.16     .13     .14     .16    -.07     .02
               -.16    -.16     .50*    .40     .24     .16
               -.07     .14    -.13    -.16    -.01    -.22
               -.15     .45*   -.00    -.04     .25     .14
                .60**   .35    1.00
```

28 SES	.65***	.76***	.68***	-.02	.06	-.03
	.32	.37	-.21	.17	-.53**	.23
	.30	.37	.34	.20	.18	.02
	.39	.02	.01	-.03	.22	-.37
	.32	.07	-.12	1.00		
29 FIRMTOT	-.12	.20	.12	.16	-.46*	-.13
	.01	.04	-.24	-.43*	.19	-.53**
	-.45*	-.20	-.39	-.54**	-.56**	-.17
	-.35	-.44*	-.00	-.11	-.52**	-.51**
	-.28	-.56**	.16	.14	1.00	
30 FIRFSI	-.33	-.24	.01	.41	-.31	-.17
	.03	-.14	-.07	-.35	.33	-.39
	-.37	-.03	-.26	-.34	-.69***	-.37
	-.34	-.27	-.07	-.09	-.21	-.22
	-.27	-.46*	.23	-.19	.58**	1.00
31 FIRFSII	-.39	-.03	-.14	.06	-.59**	-.14
	-.23	-.14	-.12	-.40	.34	-.69***
	-.63***	-.51**	-.53**	-.69***	-.55**	-.23
	-.52**	-.50*	.04	-.16	-.70***	-.46*
	-.36	-.55**	.09	-.15	.91***	.50*
	1.00					
32 FIRSS	.12	.37	.04	.37	-.09	.12
	.29	.09	-.11	.08	-.28	.07
	.10	.29	.17	.08	-.12	-.20
	.05	-.00	-.34	-.27	.24	-.22
	.28	-.06	.38	.23	.28	.53**
	.10	1.00				
33 FIRFWB	.33	.50*	.43*	.02	-.11	-.08
	.25	.31	-.32	-.33	-.06	-.17
	-.08	.15	-.14	-.21	-.23	.10
	.02	-.24	.06	.07	-.23	-.41
	-.12	-.34	.05	.53**	.77***	.12
	.52**	.04	1.00			
34 FIRSD	-.09	.08	.25	.07	-.20	-.18
	.06	-.17	-.24	-.52**	.30	-.49*
	-.43*	-.17	-.34	-.55**	-.42	-.23
	-.34	-.39	-.01	-.06	-.46*	-.35
	-.30	-.53**	.10	.03	.83***	.61**
	.74***	.20	.60**	1.00		
35 SSITOT	.33	.17	-.01	-.13	.16	.24
	.36	.33	-.76***	-.51**	-.51**	-.16
	.18	.22	.09	-.03	.19	.42
	-.04	-.62**	-.75***	-.41	-.22	-.50**
	-.31	-.47*	-.31	.15	.03	-.05
	-.00	.34	.00	.07	1.00	
36 SSISPO	.15	.06	.29	.02	.06	-.27

	.12	.19	-.40	-.52**	.05	-.57**
	-.38	-.09	-.41	-.55**	-.30	.08
	-.48*	-.63***	-.47*	-.33	-.46*	-.57**
	-.36	-.65***	.01	.10	.42	.41
	.36	.40	.22	.60**	.63***	1.00
37 SSICHI	.13	-.12	.30	.03	.16	-.19
	-.03	.23	-.15	-.38	.26	-.38
	-.28	-.24	-.25	-.32	.00	.08
	-.25	-.39	-.23	-.14	-.22	-.31
	-.30	-.41	-.22	.03	-.06	.02
	-.04	.01	-.10	.23	.46*	.72***
	1.00					
38 SSIREL	-.07	-.14	-.01	.04	-.23	.30
	.11	.00	-.41	-.34	-.19	-.20
	.02	.22	.02	-.18	-.14	.03
	-.05	-.47*	-.62**	-.66***	-.11	-.53**
	-.18	-.30	.07	-.15	.07	.38
	.03	.52**	-.16	.10	.62**	.42
	.21	1.00				
39 SSIFRD	-.14	-.02	-.19	.00	-.20	-.07
	.22	.12	-.61**	-.64***	-.11	-.60**
	-.36	-.06	-.44*	-.50**	-.47*	.07
	-.52**	-.73***	-.54**	-.42	-.58**	-.57**
	-.52**	-.66***	-.05	-.13	.66***	.51**
	.65***	.36	.36	.59**	.57**	.64***
	.06	.55**	1.00			
40 SSICWR	.01	.28	-.09	.05	-.11	.35
	.48*	.32	-.74***	-.53**	-.44*	-.19
	.06	.26	-.05	-.07	.02	.08
	-.11	-.49*	-.64***	-.42	-.14	-.48*
	-.23	-.29	-.20	.18	.32	.12
	.21	.30	.32	.22	.70***	.33
	.01	.61**	.70***	1.00		
41 SSICHR	.43*	.38	-.05	-.10	.17	-.12
	.47*	.35	-.21	.05	-.39	.20
	.24	-.02	.25	.28	.30	.23
	.14	.05	.11	.26	.19	-.13
	.13	.07	-.36	.43*	-.14	-.27
	-.21	.21	.01	-.29	.22	-.04
	.04	-.10	-.10	.11	1.00	
42 SSISFA	.17	-.06	-.23	-.18	.13	.38
	-.05	.13	-.29	-.10	-.31	.09
	.25	-.05	.17	.13	.51**	.52**
	.05	-.21	-.39	-.12	-.12	-.10
	-.03	-.03	-.25	-.13	-.43*	-.55**
	-.24	-.12	-.41	-.48*	.58**	.05
	.34	.19	-.07	.17	.32	1.00

43 SSICGR	.32	.06	-.24	.10	.32	.62***
	.30	.19	-.53**	-.28	-.45*	.40
	.62***	.64***	.42	.45*	.25	.66***
	.32	-.11	-.50*	.01	.13	.10
	-.11	-.13	-.06	-.10	-.19	-.08
	-.27	.25	-.11	-.29	.55**	.03
	-.04	.38	.18	.41	.10	.52**
	1.00					
44 SSIPRO	.62***	.12	.32	-.18	.37	.16
	.28	.31	-.68***	-.32	-.63***	.11
	.45*	.44*	.38	.26	.26	.53**
	.35	-.47*	-.59**	-.26	-.04	-.34
	-.28	-.37	-.41	.36	-.21	-.25
	-.31	.08	.01	-.08	.77***	.38
	.37	.35	.17	.35	.05	.43*
	.45*	1.00				
45 SSISPGR	.35	.32	-.04	-.11	.47*	.12
	.25	.16	.05	.38	-.41	.70***
	.67***	.44*	.63***	.73***	.55**	.17
	.59**	.47*	.00	.30	.61**	.53**
	.32	.33	.02	.25	-.48*	-.41
	-.56**	.04	-.20	-.43*	.04	-.29
	-.21	-.31	-.42	-.22	-.03	.12
	.28	.42	1.00			
46 SSITV	-.08	.14	-.07	-.41	-.24	.20
	-.06	-.16	-.48*	-.26	-.41	-.35
	-.11	-.10	-.08	-.33	.07	-.01
	-.14	-.58**	-.45*	-.63***	-.48*	-.47*
	-.24	-.24	-.35	.07	.17	-.15
	.28	-.07	.09	.22	.59**	.31
	.05	.35	.56**	.59**	-.15	.25
	.02	.49*	-.04	1.00		
47 PSUPTOT	-.37	-.40	-.38	.61**	.21	-.23
	-.02	.03	.36	.23	.26	-.01
	-.25	-.33	-.18	.25	-.05	-.32
	-.26	.36	-.01	.34	.30	.53**
	.10	.25	.17	-.42	-.24	.13
	-.09	.09	-.50**	-.18	-.32	-.19
	.02	-.25	-.28	-.37	-.01	.02
	-.16	-.38	.11	-.46*	1.00	
48 CHIPTOT	-.41	-.52**	-.21	.32	-.41	.11
	-.25	.01	-.20	-.44*	.25	-.45*
	-.29	-.06	-.32	-.34	-.62***	.06
	-.37	-.50**	-.33	-.24	-.45*	-.31
	-.49*	-.56**	.13	-.44*	.36	.64***
	.44*	.17	-.05	.17	.14	.22
	-.02	.47*	.49*	.23	-.41	.01
	.31	-.07	-.39	.00	.04	1.00

49 CHIPI	-.33	-.31	-.17	.29	-.48*	.17
	-.14	.02	-.31	-.47*	.14	-.49*
	-.32	-.04	-.36	-.44*	-.60**	.06
	-.42	-.55**	-.37	-.33	-.51**	-.49*
	-.40	-.55**	.17	-.30	.54**	.64***
	.58**	.31	.14	.29	.23	.29
	-.07	.56**	.65***	.43*	-.21	.01
	.31	-.13	-.57**	.08	-.10	.93***
	1.00					
50 CHIPII	-.55**	-.77***	-.28	.25	-.25	-.15
	-.36	-.09	.05	-.29	.46*	-.44*
	-.40	-.23	-.41	-.32	-.61**	-.05
	-.47*	-.32	-.14	-.07	-.37	-.04
	-.49*	-.41	.10	-.62***	.09	.55**
	.26	-.09	-.33	.03	-.12	.08
	.01	.23	.23	-.11	-.51**	-.07
	.06	-.19	-.29	-.12	.27	.88***
	.67***	1.00				
51 CHIPIII	.05	-.02	-.00	.30	-.26	.49*
	-.06	.19	-.40	-.37	-.14	-.03
	.22	.34	.21	.09	-.22	.24
	.24	-.40	-.40	-.24	-.14	-.28
	-.30	-.48*	.01	.01	.29	.32
	.21	.31	.18	.10	.40	.19
	.05	.44*	.31	.35	-.33	.18
	.61**	.40	.12	.11	-.20	.68***
	.60**	.38	1.00			
52 FAMGMEA	.37	.14	.21	.25	.38	.07
	-.09	-.10	.45*	.72***	-.23	.57**
	.35	.26	.33	.47*	.36	.10
	.31	.67***	.14	.28	.51**	.45*
	.70***	.69***	.37	.18	-.50*	-.36
	-.54**	.11	-.30	-.52**	-.37	-.41
	-.19	-.37	-.70***	-.55**	.29	.14
	.03	-.17	.35	-.58**	.41	-.42
	-.43*	-.31	-.32	1.00		
53 FAMGVN	.21	.15	.14	.36	.28	.20
	-.15	-.17	.44*	.67***	-.19	.47*
	.24	.10	.30	.46*	.40	-.08
	.30	.64***	.16	.25	.46*	.50*
	.65***	.72***	.16	.16	-.49*	-.42
	-.47*	-.02	-.31	-.45*	-.36	-.45*
	-.08	-.45*	-.74***	-.48*	.27	.20
	-.05	-.20	.29	-.46*	.52**	-.50*
	-.51**	-.38	-.34	.90***	1.00	
54 FAMGCON	.15	-.20	.18	.30	.29	.11
	-.24	-.35	.50**	.59**	.01	.48*
	.24	.19	.25	.37	.21	.03
	.28	.64***	.21	.29	.41	.52**

	.55**	.64***	.39	-.13	-.45*	-.20
	-.44*	-.08	-.34	-.37	-.57**	-.52**
	-.24	-.31	-.70***	-.63***	-.01	-.01
	-.06	-.32	.15	-.61**	.47*	-.26
	-.32	-.08	-.31	.87***	.82***	1.00
55 FAMGINV	.27	.24	.29	.20	.24	-.01
	-.04	.13	.47*	.68***	-.14	.51**
	.28	.11	.28	.43*	.46*	-.03
	.29	.67***	.16	.30	.57**	.33
	.73***	.66***	.43*	.32	-.40	-.45*
	-.45*	.02	-.15	-.50**	-.37	-.43*
	-.14	-.42	-.74***	-.47*	.21	.16
	-.13	-.15	.41	-.50**	.40	-.42
	-.45*	-.33	-.25	.87***	.81***	.72***
	1.00					
56 FAMGAE	.62**	.14	.41	.09	.19	.30
	-.18	-.12	-.02	.34	-.47*	.29
	.36	.36	.32	.16	.22	.47*
	.29	.06	-.21	-.15	.02	-.16
	.39	.23	.16	.28	-.28	-.29
	-.34	.22	-.14	-.35	.16	-.01
	.08	.10	-.29	-.19	.37	.46*
	.32	.24	.04	-.19	-.08	-.14
	-.05	-.27	.03	.70***	.57**	.56**
	.50**	1.00				
57 FAMGCOM	.30	.16	.12	.29	.41	-.04
	-.02	.01	.47*	.65***	-.11	.54**
	.29	.20	.25	.46*	.31	.10
	.23	.71***	.16	.44*	.52**	.54**
	.65***	.58**	.52**	.11	-.31	-.28
	-.36	.13	-.15	-.37	-.42	-.38
	-.25	-.49*	-.61**	-.58**	.15	.04
	.02	-.23	.46*	-.62**	.51**	-.36
	-.39	-.25	-.23	.92***	.80***	.80***
	.87***	.51**	1.00			
58 FAMGRP	.26	.17	.07	.28	.32	-.05
	.04	-.13	.45*	.74***	-.26	.51**
	.28	.25	.29	.44*	.19	-.07
	.21	.66***	.14	.22	.54**	.44*
	.68***	.65***	.39	.16	-.40	-.09
	-.48*	.37	-.35	-.44*	-.35	-.34
	-.31	-.25	-.50**	-.47*	.37	-.07
	-.01	-.26	.32	-.55**	.44*	-.36
	-.33	-.25	-.38	.90***	.75***	.74***
	.69***	.56**	.82***	1.00		
59 FAMGTA	.35	.11	.11	.03	.52**	-.04
	.00	-.06	.47*	.70***	-.18	.62**
	.40	.32	.32	.50**	.37	.16
	.30	.71***	.27	.36	.56**	.58**

```
                .58**    .70***   .21      .13     -.68***  -.42
               -.74***  -.05     -.40     -.64***  -.39     -.44*
               -.18     -.43*    -.72***  -.57**    .32      .06
                .06     -.16      .41     -.58**    .27     -.50**
               -.56**   -.29     -.47*     .88***   .74***   .73***
                .67***   .52**    .76***   .85***  1.00

60 FAMGDEF     -.05     -.02      .31      .19     -.24     -.15
                .01      .03     -.26     -.54**    .30     -.50*
               -.41     -.01     -.47*    -.58**   -.62**    .00
               -.44*    -.43*    -.06     -.02     -.53**   -.45*
               -.33     -.56**    .24      .05      .85***   .62***
                .72***   .11      .71***   .78***  -.05      .45*
                .03      .10      .58**    .26     -.28     -.46*
               -.10     -.22     -.59**   -.02     -.29      .49*
                .62**    .29      .26     -.43*    -.49*    -.29
               -.40     -.19     -.30     -.40     -.52**   1.00

61 FAMGSD      -.37     -.14     -.08      .47*    -.38     -.16
                .06      .21     -.27     -.56**    .31     -.60**
               -.53**   -.21     -.50*    -.40     -.71***  -.25
               -.48*    -.47*    -.13     -.01     -.42     -.34
               -.50**   -.61**    .02     -.08      .81***   .73***
                .76***   .20      .49*     .64***  -.00      .34
               -.01      .12      .62**    .35     -.25     -.41
               -.08     -.24     -.47*     .02      .08      .66***
                .70***   .49*     .43*    -.57**   -.50**   -.46*
               -.46*    -.49*    -.39     -.45*    -.69***   .78***
               1.00

62 FAMDMEA      .35     -.12      .27      .45*     .45*     .25
               -.07     -.00      .21      .38     -.16      .53**
                .42      .38      .36      .55**    .33      .25
                .39      .49*    -.10      .30      .46*     .44*
                .43*     .46*     .29      .03     -.48*    -.29
               -.53**   -.04     -.26     -.42     -.24     -.37
               -.02     -.23     -.66***  -.43*    -.04      .24
                .24      .06      .37     -.55**    .46*    -.16
               -.27     -.08      .05      .81***   .79***   .85***
                .77***   .60**    .78***   .57**    .61**   -.31
               -.39     1.00

63 FAMDVN       .35     -.05      .19      .40      .40      .24
               -.04      .01      .07      .33     -.31      .43*
                .35      .22      .33      .51**    .41      .24
                .31      .38     -.18      .27      .33      .35
                .40      .42      .15      .08     -.39     -.41
               -.38     -.08     -.21     -.37     -.12     -.35
               -.04     -.29     -.56**   -.31      .10      .39
                .17      .11      .35     -.32      .50*    -.25
               -.31     -.21     -.03      .77***   .82***   .75***
                .77***   .59**    .75***   .51**    .48*    -.35
               -.36      .92***  1.00
```

64 FAMDCON	.38	-.01	.33	.50**	.44*	.26
	.19	.13	.04	.19	-.19	.59**
	.50**	.49*	.45*	.65***	.32	.20
	.47*	.49*	-.07	.44*	.56**	.41
	.37	.37	.24	.17	-.30	-.15
	-.46*	.01	-.03	-.26	-.25	-.39
	-.11	-.23	-.58**	-.25	-.01	.06
	.25	.06	.36	-.57**	.39	-.13
	-.21	-.11	.13	.66***	.66***	.72***
	.69***	.41	.67***	.45*	.45*	-.13
	-.17	.92***	.84***	1.00		
65 FAMDINV	.12	-.01	.27	.60**	.18	.26
	-.16	.00	.33	.45*	-.07	.43*
	.27	.40	.24	.47*	.05	-.07
	.38	.51**	-.03	.17	.47*	.42
	.44*	.46*	.46*	.09	-.18	-.08
	-.30	.04	.00	-.24	-.45*	-.44*
	-.28	-.26	-.53**	-.34	-.37	-.17
	.09	-.11	.39	-.49*	.40	-.01
	-.14	.02	.23	.61**	.60**	.69***
	.66***	.27	.68***	.43*	.39	-.09
	-.06	.82***	.70***	.83***	1.00	
66 FAMDAE	.39	-.30	.12	.13	.51**	.04
	-.09	-.02	.19	.28	-.06	.38
	.31	.14	.23	.37	.36	.46*
	.23	.33	-.04	.28	.28	.33
	.24	.32	.16	-.18	-.58**	-.42
	-.53**	-.14	-.41	-.47*	-.11	-.24
	.16	-.13	-.58**	-.51**	.18	.45*
	.21	.07	.17	-.50**	.38	-.24
	-.31	-.11	-.19	.75***	.66***	.79***
	.61**	.69***	.67***	.53**	.64***	-.42
	-.59**	.82***	.77***	.63***	.42	1.00
67 FAMDCOM	.25	-.27	.22	.23	.45*	.23
	-.19	-.11	.26	.30	.02	.49*
	.38	.37	.25	.39	.29	.36
	.28	.46*	-.06	.30	.33	.48*
	.34	.38	.43*	-.19	-.47*	-.28
	-.48*	-.20	-.27	-.38	-.29	-.34
	-.04	-.21	-.59**	-.49*	-.28	.22
	.28	.01	.33	-.52**	.32	-.02
	-.17	.11	.07	.68***	.58**	.80***
	.63***	.50**	.70***	.41	.56**	-.19
	-.39	.91***	.77***	.79***	.75***	.80***
	1.00					
68 FAMDRP	.26	-.03	.20	.26	.41	-.06
	.01	.16	.34	.41	-.01	.36
	.20	.10	.18	.38	.30	.09
	.15	.46*	.16	.34	.45*	.36
	.37	.46*	-.02	.16	-.66***	-.33

	-.68***	-.08	-.44*	-.59**	-.21	-.22
	.28	-.30	-.73***	-.45*	.43*	.28
	.03	-.09	.15	-.62***	.40	-.33
	-.40	-.14	-.33	.73***	.74***	.59**
	.64***	.50*	.55**	.62**	.79***	-.46*
	-.48*	.63***	.53**	.51**	.31	.65***
	.48*	1.00				
69 FAMDTA	.33	-.07	.31	.48*	.27	.47*
	-.14	-.19	.04	.29	-.31	.46*
	.46*	.54**	.47*	.47*	.20	.17
	.46*	.28	-.32	-.03	.34	.26
	.37	.29	.32	.04	-.30	-.03
	-.38	.24	-.23	-.21	-.01	-.16
	-.03	.10	-.38	-.21	-.26	.18
	.38	.27	.39	-.27	.29	.05
	-.06	.01	.37	.60**	.58**	.66***
	.51**	.58**	.57**	.43*	.34	-.20
	-.25	.86***	.77***	.80***	.80***	.59**
	.78***	.31	1.00			
70 FAMSMEA	.45*	.07	.29	.40	.42	.20
	-.03	-.03	.21	.47*	-.29	.46*
	.34	.33	.28	.42	.30	.26
	.26	.46*	-.07	.21	.38	.29
	.55**	.53**	.29	.17	-.41	-.31
	-.48*	.13	-.21	-.42	-.18	-.27
	-.02	-.20	-.56**	-.35	.32	.27
	.20	-.06	.15	-.54**	.37	-.29
	-.25	-.28	-.18	.92***	.87***	.84***
	.77***	.81***	.81***	.77***	.74***	-.28
	-.45*	.87***	.83***	.75***	.59**	.82***
	.72***	.74***	.68***	1.00		
71 FAMSVN	.18	.05	.10	.48*	.18	.35
	-.04	-.14	.21	.49*	-.31	.46*
	.32	.18	.41	.55**	.36	-.08
	.38	.49*	-.00	.14	.47*	.36
	.53**	.63***	.01	.15	-.47*	-.30
	-.47*	.07	-.34	-.46*	-.22	-.49*
	-.12	-.19	-.62***	-.24	.32	.25
	.07	-.10	.17	-.37	.50**	-.33
	-.32	-.30	-.17	.78***	.91***	.76***
	.68***	.56**	.61**	.65***	.57**	-.48*
	-.39	.77***	.82***	.72***	.58**	.61**
	.50**	.67***	.64***	.83***	1.00	
72 FAMSCON	.24	-.07	.18	.13	.22	-.08
	.21	.00	.05	.07	-.01	.12
	.04	.07	-.02	.00	.12	.16
	-.11	.19	-.04	.13	.16	-.07
	.30	.22	.26	-.01	-.15	.05
	-.21	.25	-.14	-.11	-.04	.03
	.11	.20	-.13	-.07	.52**	.14

	.03	-.26	-.42	-.45*	.17	-.13
	.06	-.16	-.40	.50**	.37	.50**
	.33	.56**	.34	.51**	.42	.03
	-.23	.34	.29	.29	-.02	.57**
	.26	.51**	.13	.63***	.43*	1.00
73 FAMSINV	.41	-.13	.23	.07	.55**	-.03
	-.08	.17	.21	.25	-.01	.44*
	.36	.38	.13	.36	.17	.54**
	.22	.39	.07	.46*	.24	.44*
	.18	.24	.31	-.01	-.35	-.39
	-.42	-.36	.00	-.40	-.34	-.34
	-.15	-.46*	-.53**	-.50**	-.18	.10
	.25	.03	.42	-.53**	.11	-.08
	-.23	.05	.02	.57**	.40	.58**
	.55**	.37	.66***	.33	.60**	-.08
	-.32	.70***	.56**	.62**	.63***	.63***
	.84***	.41	.47*	.55**	.21	.08
	1.00					
74 FAMSAE	.58**	.04	.51**	.15	.31	.16
	-.09	-.08	.06	.40	-.42	.34
	.34	.45*	.26	.22	.17	.37
	.25	.20	-.18	-.08	.18	-.06
	.45*	.38	.22	.29	-.40	-.25
	-.51**	.13	-.17	-.41	-.03	-.14
	-.01	.07	-.40	-.22	.31	.24
	.19	.13	.01	-.32	-.02	-.19
	-.11	-.22	-.15	.76***	.60**	.69***
	.57**	.91***	.54**	.65***	.66***	-.18
	-.51**	.67***	.59**	.53**	.38	.70***
	.58**	.61**	.57**	.86***	.61**	.67***
	.46*	1.00				
75 FAMSCOM	.26	.04	-.04	.38	.42	.06
	-.12	.02	.19	.32	-.12	.20
	.10	.09	.01	.22	.16	.28
	-.03	.29	-.19	.22	.12	.36
	.31	.21	.40	-.11	-.13	-.19
	-.09	.22	-.15	-.15	-.01	.04
	.07	-.29	-.22	-.37	.04	.32
	.27	-.02	.33	-.36	.52**	-.11
	-.14	-.11	.03	.67***	.61**	.54**
	.55**	.53**	.79***	.55**	.45*	-.16
	-.20	.65***	.69***	.46*	.49*	.63***
	.60**	.35	.57**	.68***	.43	.21
	.54**	.38	1.00			
76 FAMSRP	.38	.42	.19	.25	.22	.32
	.18	.00	.22	.53**	-.35	.65***
	.50**	.39	.52**	.55**	.45*	.04
	.46*	.61**	.17	.26	.59**	.30
	.70***	.65***	.14	.41	-.40	-.28
	-.54**	.26	-.15	-.48*	-.18	-.40

	-.17	-.20	-.59**	-.18	.59**	.17
	.20	-.15	.20	-.51**	.18	-.42
	-.31	-.48*	-.21	.81***	.79***	.61**
	.68***	.64***	.63***	.77***	.73***	-.36
	-.45*	.59**	.56**	.59**	.38	.48*
	.37	.74***	.42	.81***	.80***	.58**
	.25	.68***	.34	1.00		
77 FAMSTA	.32	-.07	.38	.58**	.32	.20
	-.24	-.08	.16	.36	-.21	.17
	.08	.19	.08	.27	.10	.09
	.17	.24	-.21	.01	.16	.21
	.34	.37	.16	.12	-.27	-.25
	-.30	-.01	-.11	-.18	-.16	-.14
	.15	-.22	-.47*	-.32	-.03	.19
	.03	.06	.12	-.32	.44*	-.23
	-.26	-.19	-.04	.71***	.81***	.73***
	.62***	.62**	.64***	.48*	.45*	-.18
	-.25	.85***	.87***	.72***	.72***	.68***
	.68***	.55**	.77***	.83***	.78***	.30
	.46*	.64***	.66***	.50**	1.00	

Note. 2-tailed p-values, * p < .10, ** p < .05, *** p < .01.

Table AI.4

Statistical Significance (2-tailed) of Difference Between the Mother and Father Sample Correlations

1 PARAGE	1.000															
2 EDUC	.582	1.000														
3 INCOME	.199	.682	1.000													
4 CHIAGE	.745	.475	1.000	1.000												
5 BORDER	.575	.969	1.000	1.000	1.000											
6 IDELAY	.815	.533	1.000	1.000	1.000	1.000										
7 DIANEU	.883	.913	1.000	1.000	1.000	1.000	1.000									
8 DIAPYS	.117	.727	1.000	1.000	1.000	1.000	1.000	1.000								
9 LESTOT	.179	.223	.352	.678	.079*	.738	.074*	.333	1.000							
10 LESNEG	.937	.095*	.311	.769	.621	.699	.479	.984	.317	1.000						
11 LESPOS	.032**	.842	.761	.481	.060*	.654	.168	.361	.088*	.692	1.000					
12 PSITOT	.885	.984	.758	.733	.411	.384	.559	.438	.571	.406	.075*	1.000				
13 CHITOT	.879	.652	.835	.783	.802	.183	.851	.228	.409	.571	.052*	.344	1.000			
14 PSIADA	.808	.833	.790	.208	.527	.524	.649	.711	.444	.927	.129	.910	.952	1.000		
15 PSIACC	.845	.301	.633	.586	.890	.175	.997	.197	.924	.538	.278	.353	.921	.482	1.000	
16 PSIDEM	.776	.567	.775	.377	.833	.590	.715	.535	.337	.676	.046**	.926	.873	.611	.653	1.000

17 PSIMOD	.716	.875	.847	.950	.317	.203
	.438	.516	.974	.419	.335	.609
	.761	.444	.389	.771	1.000	
18 PSIDIS	.971	.245	.755	.836	.642	.642
	.613	.444	.064*	.761	.077*	.279
	.075*	.670	.224	.120	.557	1.000
19 PSIREI	.673	.722	.871	.764	.781	.118
	.826	.152	.927	.191	.148	.170
	.765	.974	.039**	.260	.879	.053*
	1.000					
20 PARTOT	.945	.710	.692	.680	.105	.959
	.325	.728	.468	.139	.451	.543
	.904	.687	.726	.893	.497	.300
	.324	1.000				
21 PSIDEP	.515	.374	.542	.090*	.126	.487
	.337	.365	.362	.658	.101	.593
	.622	.327	.713	.560	.929	.166
	.888	.943	1.000			
22 PSIATT	.379	.622	.565	.680	.565	.538
	.804	.411	.381	.823	.280	.847
	.303	.455	.657	.579	.832	.022**
	.553	.434	.938	1.000		
23 PSIRES	.538	.220	.523	.635	.763	.712
	.716	.718	.165	.834	.038**	.689
	.741	.949	.768	.508	.883	.031**
	.835	.222	.205	.450	1.000	
24 PSICOM	.925	.733	.550	.991	.373	.495
	.756	.459	.628	.857	.359	.184
	.522	.213	.422	.387	.658	.423
	.576	.029**	.521	.543	.677	1.000
25 PSIISO	.619	.094*	.657	.417	.221	.981
	.841	.566	.816	.216	.268	.930
	.778	.371	.955	.726	.572	.195
	.677	.366	.923	.669	.838	.453
	1.000					
26 PSISPO	.392	.268	.856	.495	.315	.923
	.420	.295	.841	.201	.257	.429
	.455	.235	.620	.663	.920	.141
	.952	.406	.692	.613	.359	.265
	.601	1.000				
27 PSIHEA	.475	.950	.334	.208	.071*	.707
	.240	.649	.878	.532	.378	.008***
	.046**	.357	.157	.019**	.196	.028**
	.133	.215	.094*	.057*	.072*	.501

```
                .988     .201    1.000

28 SES          .441     .304    1.000    1.000    1.000    1.000
               1.000    1.000     .425     .411     .854     .988
                .952     .776     .532     .985     .940     .938
                .595     .900     .354     .603     .388     .663
                .362     .980     .626    1.000

29 FIRMTOT      .964     .839    1.000    1.000    1.000    1.000
               1.000    1.000     .126     .574     .079*    .699
                .850     .760     .809     .851     .599     .934
                .836     .474     .297     .919     .266     .494
                .073*    .062*    .015**  1.000    1.000

30 FIRFSI       .863     .532    1.000    1.000    1.000    1.000
               1.000    1.000     .768     .861     .915     .873
                .778     .300     .555     .798     .386     .606
                .993     .988     .323     .656     .680     .624
                .260     .532     .151    1.000    1.000    1.000

31 FIRFSII      .887     .666    1.000    1.000    1.000    1.000
               1.000    1.000     .116     .667     .042**   .880
                .536     .964     .669     .583     .409     .912
                .488     .392     .234     .995     .819     .287
                .091*    .055*    .045**  1.000    1.000    1.000
               1.000

32 FIRSS        .969     .206    1.000    1.000    1.000    1.000
               1.000    1.000     .770     .498     .308     .722
                .616     .727     .482     .381     .818     .679
                .812     .967     .096*    .353     .556     .810
                .139     .965     .144    1.000    1.000    1.000
               1.000    1.000

33 FIRFWB       .885     .949    1.000    1.000    1.000    1.000
               1.000    1.000     .107     .764     .088*    .728
                .989     .825     .669     .849     .893     .805
                .793     .642     .087*    .528     .218     .892
                .491     .457     .104    1.000    1.000    1.000
               1.000    1.000    1.000

34 FIRSD        .395     .560    1.000    1.000    1.000    1.000
               1.000    1.000     .324     .676     .124     .787
                .929     .700     .830     .767     .889     .912
                .835     .629     .575     .692     .245     .846
                .296     .335     .208    1.000    1.000    1.000
               1.000    1.000    1.000    1.000

35 SSITOT       .409     .428     .697     .309     .651     .477
                .374     .225     .000***  .110     .004***  .659
                .328     .249     .279     .708     .060*    .217
                .923     .017**   .000***  .217     .531     .104
                .536     .243     .242     .469     .582     .246
                .459     .358     .619     .835    1.000
```

36 SSISPO	.172	.663	.544	.516	.651	.884
	.578	.216	.259	.493	.696	.867
	.225	.167	.244	.978	.220	.157
	.861	.147	.072*	.677	.634	.144
	.667	.910	.361	.401	.728	.087*
	.777	.681	1.000	.630	.719	1.000
37 SSICHI	.250	.432	.739	.644	.920	.606
	.533	.145	.209	.191	.855	.676
	.317	.599	.227	.875	.110	.080*
	.441	.131	.309	.591	.820	.482
	.335	.380	.770	.548	.803	.617
	.720	.673	.858	.784	.313	.616
	1.000					
38 SSIREL	.709	.556	.741	.615	.589	.215
	.542	.661	.502	.626	.820	.551
	.121	.122	.110	.459	.340	.174
	.635	.378	.166	.533	.440	.553
	.318	.908	.185	.485	.811	.710
	.736	.628	.741	.742	.382	.984
	.506	1.000				
39 SSIFRD	.767	.740	.234	.660	.400	.248
	.349	.892	.026**	.172	.248	.206
	.765	.351	.634	.211	.489	.503
	.183	.029**	.101	.471	.215	.098*
	.503	.164	.663	.621	.026**	.475
	.031**	.182	.197	.100*	.551	.470
	.071*	.887	1.000			
40 SSICWR	.660	.800	.248	.910	.853	.498
	.243	.656	.007***	.447	.040**	.485
	.804	.837	.673	.457	.866	.617
	.984	.176	.021**	.017**	.708	.191
	.432	.659	.542	.687	.515	.572
	.523	.420	.542	.729	.175	.673
	.529	.010**	.095*	1.000		
41 SSICHR	.854	.462	.462	.383	.101	.987
	.918	.834	.261	.751	.063*	.472
	.808	.466	.697	.717	.241	.638
	.325	.335	.476	.846	.705	.790
	.869	.753	.029**	.394	.865	.456
	.562	.694	.902	.478	.280	.703
	.833	.591	.398	.586	1.000	
42 SSISFA	.742	.503	.490	.272	.659	.563
	.749	.445	.089*	.383	.122	.534
	.789	.902	.874	.613	.096*	.222
	.519	.131	.019**	.750	.373	.446
	.640	.625	.096*	.774	.676	.080*
	.705	.936	.468	.333	.950	.829

```
                  .696     .462     .519     .406     .173    1.000

 43 SSICGR        .580     .602     .706     .785     .725     .193
                  .985     .989     .008***  .361     .012**   .511
                  .173     .117     .182     .830     .066*    .535
                  .790     .633     .022**   .194     .625     .844
                  .491     .550     .313     .759     .997     .591
                  .896     .677     .952     .952     .725     .873
                  .487     .296     .979     .933     .173     .636
                 1.000

 44 SSIPRO        .065*    .924     .141     .894     .845     .961
                  .633     .150     .002***  .079*    .011**   .370
                  .617     .215     .692     .306     .713     .363
                  .626     .015**   .028**   .249     .237     .111
                  .182     .044**   .012**   .192     .259     .980
                  .658     .336     .130     .246     .197     .097*
                  .483     .410     .805     .277     .554     .742
                  .852    1.000

 45 SSISPGR       .282     .093*    .474     .524     .170     .762
                  .227     .283     .099*    .689     .026**   .009***
                  .007***  .042**   .007***  .028**   .007***  .529
                  .014**   .182     .263     .739     .135     .836
                  .558     .484     .878     .083*    .473     .101
                  .265     .586     .756     .695     .062*    .137
                  .052*    .510     .063*    .108     .892     .526
                  .396     .937    1.000

 46 SSITV         .939     .937     .573     .341     .321     .366
                  .697     .991     .018**   .077*    .101     .042**
                  .307     .388     .277     .114     .714     .793
                  .287     .007***  .028**   .058*    .007***  .079*
                  .339     .089*    .057*    .877     .095*    .639
                  .030**   .816     .227     .167     .486     .283
                  .780     .292     .238     .039**   .088*    .202
                  .853     .954     .531    1.000

 47 PSUPTOT       .707     .512    1.000    1.000    1.000    1.000
                 1.000    1.000     .638     .970     .519     .854
                  .894     .550     .611     .401     .870     .719
                  .773     .553     .281     .304     .955     .828
                  .743     .612     .656    1.000    1.000    1.000
                 1.000    1.000    1.000    1.000     .412     .566
                  .781     .367     .333     .755     .894     .976
                  .840     .310     .895     .234    1.000

 48 CHIPTOT       .541     .708     .966     .411     .113     .906
                  .626     .668     .018**   .020**   .490     .281
                  .948     .309     .860     .232     .536     .731
                  .623     .068*    .013**   .442     .066*    .011**
                  .270     .090*    .934     .876     .128     .281
                  .089*    .623     .420     .388     .110     .833
                  .242     .246     .526     .816     .058*    .155
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             .698     .306    .000*** .319     .198    1.000

49 CHIPI     .810     .874    .926    .223     .149     .627
             .946     .432    .090*   .095*    .635     .583
             .507     .104    .376    .491     .935     .383
             .847     .109    .035**  .630     .251     .014**
             .922     .438    .424    .848     .235     .797
             .205     .667    .453    .919     .246     .348
             .160     .415    .254    .302     .230     .296
             .879     .571    .001*** .669     .113     .618
            1.000

50 CHIPII    .064*    .027**  .879    .711     .275     .485
             .264     .663    .129    .067*    .957     .169
             .245     .999    .320    .055*    .249     .491
             .259     .292    .133    .288     .059*    .064*
             .090*    .195    .877    .299     .412     .204
             .200     .651    .706    .344     .118     .860
             .641     .093*   .724    .163     .065*    .190
             .169     .170    .001*** .355     .911     .617
             .634    1.000

51 CHIPIII   .616     .146    .638    .780     .126     .228
             .824     .278    .004*** .011**   .159     .483
             .438     .309    .317    .887     .636     .258
             .654     .019**  .010*** .813     .106     .113
             .179     .002*** .372    .674     .006***  .224
             .026**   .666    .010*** .119     .930     .589
             .418     .953    .892    .053*    .074*    .559
             .145     .975    .576    .236     .135     .496
             .471     .452   1.000

52 FAMGMEA   .491     .053*   .259    .740     .471     .744
             .921     .753    .860    .870     .327     .202
             .409     .767    .473    .235     .528     .502
             .452     .108    .951    .277     .996     .384
             .820     .804    .527    .434     .519     .624
             .767     .564    .646    .338     .659     .760
             .642     .767    .147    .350     .273     .745
             .938     .640    .593    .038**   .983     .121
             .399     .151    .055*  1.000

53 FAMGVN    .974     .027**  .300    .712     .730     .890
             .812     .449    .722    .936     .256     .272
             .527     .979    .387    .180     .323     .886
             .549     .111    .796    .400     .937     .268
             .815     .470    .947    .403     .742     .940
             .719     .989    .805    .423     .560     .824
             .788     .495    .076*   .534     .449     .696
             .709     .778    .688    .133     .772     .075*
             .234     .123    .053*   .206    1.000

54 FAMGCON   .694     .258    .306    .633     .297     .381
             .738     .829    .623    .553     .915     .066*
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	.205	.652	.223	.104	.236	.341
	.263	.029**	.582	.108	.457	.092*
	.927	.306	.218	.767	.931	.677
	.856	.927	.880	.547	.126	.398
	.254	.612	.132	.160	.659	.850
	.558	.404	.565	.070*	.398	.257
	.437	.419	.115	.783	.898	1.000
55 FAMGINV	.906	.016**	.203	.992	.788	.843
	.848	.932	.944	.974	.495	.161
	.484	.927	.464	.278	.229	.892
	.485	.043**	.813	.290	.690	.640
	.404	.531	.241	.249	.643	.890
	.848	.701	.616	.377	.667	.828
	.746	.590	.071*	.386	.342	.477
	.590	.860	.517	.145	.879	.104
	.319	.092*	.161	.178	.217	.565
	1.000					
56 FAMGAE	.234	.202	.231	.912	.871	.609
	.642	.423	.218	.721	.056*	.678
	.947	.880	.912	.785	.530	.340
	.946	.480	.325	.576	.040**	.576
	.205	.090*	.627	.433	.091*	.366
	.186	.436	.284	.114	.202	.028**
	.492	.235	.991	.875	.259	.141
	.360	.592	.647	.380	.220	.837
	.408	.356	.507	.222	.178	.938
	.107	1.000				
57 FAMGCOM	.419	.029**	.276	.936	.286	.602
	.758	.968	.763	.678	.393	.126
	.252	.436	.400	.177	.469	.258
	.327	.061*	.832	.103	.703	.390
	.601	.787	.151	.508	.407	.853
	.619	.540	.414	.339	.402	.871
	.314	.409	.172	.260	.357	.974
	.822	.575	.587	.032**	.990	.088*
	.257	.126	.090*	.671	.189	.987
	.827	.328	1.000			
58 FAMGRP	.518	.104	.356	.615	.686	.563
	.787	.996	.537	.447	.206	.482
	.628	.740	.676	.420	.956	.923
	.594	.278	.676	.453	.749	.667
	.850	.830	.768	.393	.200	.358
	.489	.247	.395	.204	.548	.608
	.520	.916	.547	.579	.225	.574
	.968	.201	.812	.010***	.902	.076*
	.356	.125	.014**	.670	.503	.955
	.306	.182	.676	1.000		
59 FAMGTA	.488	.314	.622	.673	.302	.690
	.985	.650	.622	.837	.712	.442

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               .722     .882     .939     .394     .781     .533
               .690     .212     .596     .208     .972     .174
               .720     .641     .827     .982     .998     .259
               .681     .714     .901     .911     .961     .369
               .964     .758     .191     .465     .286     .797
               .388     .688     .145     .019**   .846     .241
               .514     .476     .021**   .947     .777     .489
               .591     .093*    .895     .802    1.000

60 FAMGDEF     .649     .314     .418     .731     .421     .847
               .953     .680     .345     .746     .123     .490
               .799     .575     .589     .303     .403     .594
               .690     .394     .345     .416     .404     .894
               .888     .622     .116     .760     .140     .332
               .351     .567     .614     .825     .602     .730
               .408     .712     .364     .969     .348     .295
               .951     .843     .314     .391     .802     .074*
               .142     .179     .042**   .369     .536     .547
               .520     .217     .263     .227     .694    1.000

61 FAMGSD      .975     .726     .400     .767     .596     .809
               .717     .382     .802     .538     .418     .638
               .863     .586     .881     .993     .347     .878
               .703     .607     .994     .770     .505     .774
               .656     .473     .270     .826     .376     .838
               .525     .954     .582     .455     .613     .288
               .396     .552     .257     .936     .623     .602
               .800     .734     .300     .241     .987     .073*
               .302     .123     .028**   .788     .789     .936
               .789     .792     .628     .409     .726     .898
              1.000

62 FAMDMEA     .539     .160     .233     .404     .376     .668
               .855     .770     .345     .413     .283     .209
               .263     .373     .349     .142     .593     .275
               .326     .323     .549     .280     .990     .374
               .451     .748     .620     .630     .464     .556
               .767     .643     .551     .242     .788     .809
               .706     .996     .077*    .438     .775     .481
               .570     .893     .555     .090*    .988     .476
               .777     .417     .458     .049**   .082*    .678
               .087*    .098*    .110     .156     .329     .404
               .631    1.000

63 FAMDVN      .781     .327     .285     .487     .340     .597
               .854     .671     .390     .449     .262     .197
               .397     .469     .471     .263     .284     .482
               .509     .199     .755     .393     .980     .568
               .767     .700     .626     .524     .801     .929
               .907     .404     .917     .259     .995     .741
               .911     .848     .172     .537     .517     .344
               .980     .959     .777     .392     .689     .282
               .651     .082*    .870     .669     .899     .994
               .362     .606     .714     .394     .694     .711
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                 .698     .581    1.000

64 FAMDCON       .377     .137     .171     .325     .208     .822
                 .576     .928     .317     .216     .425     .174
                 .236     .331     .353     .078*    .841     .370
                 .234     .326     .622     .153     .926     .425
                 .706     .434     .710     .585     .333     .404
                 .720     .917     .267     .147     .902     .572
                 .984     .971     .341     .849     .640     .663
                 .356     .752     .393     .041**   .980     .568
                 .887     .453     .597     .030**   .123     .921
                 .185     .025**   .089*    .063*    .030**   .072*
                 .281     .839     .497    1.000

65 FAMDINV       .933     .105     .352     .297     .930     .739
                 .933     .853     .612     .634     .429     .270
                 .330     .193     .416     .229     .900     .549
                 .228     .285     .711     .311     .632     .399
                 .629     .981     .200     .659     .162     .318
                 .357     .415     .279     .159     .213     .732
                 .113     .749     .098*    .480     .536     .576
                 .896     .683     .708     .176     .812     .524
                 .790     .409     .781     .088*    .142     .663
                 .169     .072*    .066*    .194     .275     .354
                 .321     .072*    .276     .913    1.000

66 FAMDAE        .648     .477     .432     .705     .465     .825
                 .975     .554     .532     .893     .353     .672
                 .734     .822     .739     .375     .950     .253
                 .964     .695     .660     .531     .490     .426
                 .177     .401     .768     .969     .816     .648
                 .983     .963     .817     .560     .570     .421
                 .623     .934     .212     .434     .452     .069*
                 .518     .698     .348     .288     .940     .943
                 .725     .952     .229     .834     .394     .274
                 .442     .174     .993     .644     .709     .803
                 .672     .819     .542     .625     .229    1.000

67 FAMDCOM       .517     .187     .353     .840     .392     .530
                 .998     .768     .262     .362     .345     .176
                 .129     .245     .258     .170     .442     .062*
                 .268     .429     .435     .221     .965     .278
                 .395     .777     .335     .920     .582     .966
                 .710     .898     .531     .548     .405     .620
                 .273     .787     .062*    .262     .658     .550
                 .483     .831     .782     .104     .672     .624
                 .744     .832     .389     .187     .045**   .793
                 .248     .302     .136     .172     .594     .463
                 .968     .549     .966     .963     .142     .964
                1.000

68 FAMDRP        .674     .292     .538     .529     .500     .562
                 .691     .635     .519     .142     .633     .803
                 .874     .767     .974     .618     .785     .556
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	.809	.628	.966	.202	.742	.535
	.202	.341	.526	.642	.404	.450
	.611	.615	.815	.242	.605	.350
	.698	.877	.031**	.317	.198	.708
	.960	.419	.772	.006***	.706	.156
	.448	.239	.033**	.066*	.485	.392
	.154	.078*	.067*	.070*	.632	.588
	.473	.037**	.205	.050**	.007***	.856
	.071*	1.000				
69 FAMDTA	.545	.073*	.099*	.398	.695	.260
	.997	.444	.171	.430	.116	.203
	.131	.095*	.111	.135	.711	.342
	.180	.615	.187	.891	.917	.761
	.469	.646	.521	.403	.434	.321
	.780	.302	.579	.218	.631	.658
	.695	.399	.559	.992	.822	.513
	.323	.322	.448	.669	.482	.941
	.813	.663	.762	.029**	.003***	.507
	.023**	.260	.027**	.162	.167	.326
	.557	.070*	.601	.749	.298	.087*
	.097*	.055*	1.000			
70 FAMSMEA	.657	.270	.241	.332	.636	.474
	.760	.670	.639	.586	.350	.367
	.643	.616	.778	.362	.748	.633
	.823	.270	.749	.501	.848	.878
	.750	.829	.641	.469	.790	.372
	.877	.271	.937	.433	.666	.416
	.724	.542	.428	.822	.258	.410
	.567	.977	.762	.117	.927	.369
	.926	.179	.375	.292	.561	.264
	.317	.797	.629	.956	.915	.575
	.553	.570	.821	.673	.553	.666
	.888	.995	.506	1.000		
71 FAMSVN	.947	.547	.437	.212	.630	.510
	.352	.826	.682	.435	.402	.322
	.784	.746	.728	.259	.749	.682
	.748	.145	.824	.555	.819	.899
	.906	.425	.843	.543	.886	.428
	.780	.175	.960	.240	.875	.798
	.900	.514	.169	.994	.224	.964
	.846	.369	.721	.125	.462	.127
	.501	.051*	.265	.667	.033**	.482
	.893	.934	.882	.751	.946	.757
	.274	.498	.583	.432	.829	.589
	.946	.865	.802	.977	1.000	
72 FAMSCON	.916	.836	.968	.852	.443	.967
	.529	.824	.934	.643	.922	.838
	.804	.652	.929	.682	.310	.728
	.972	.842	.611	.415	.558	.924
	.869	.544	.402	.972	.970	.352

	.908	.092*	.583	.904	.735	.713
	.737	.448	.589	.820	.162	.817
	.616	.227	.152	.475	.822	.500
	.926	.246	.411	.375	.513	.426
	.990	.261	.560	.389	.281	.487
	.599	.796	.700	.371	.319	.265
	.865	.408	.790	.649	.929	1.000
73 FAMSINV	.265	.101	.321	.938	.433	.891
	.718	.624	.442	.591	.425	.164
	.106	.154	.231	.190	.424	.027**
	.255	.459	.928	.097*	.854	.314
	.218	.863	.529	.310	.639	.966
	.970	.972	.347	.988	.370	.536
	.110	.294	.099*	.202	.918	.506
	.677	.761	.505	.369	.372	.654
	.692	.779	.644	.551	.197	.688
	.380	.410	.904	.473	.743	.817
	.788	.452	.483	.854	.303	.424
	.731	.348	.047**	.539	.590	.252
	1.000					
74 FAMSAE	.586	.772	.074*	.345	.697	.258
	.691	.396	.658	.918	.240	.953
	.754	.994	.557	.795	.384	.868
	.599	.780	.422	.536	.217	.555
	.832	.608	.990	.680	.916	.601
	.625	.993	.889	.680	.239	.198
	.109	.407	.934	.604	.405	.332
	.367	.598	.512	.106	.689	.963
	.459	.861	.298	.280	.717	.121
	.867	.027**	.550	.759	.874	.173
	.374	.323	.366	.771	.608	.497
	.339	.497	.504	.258	.789	.050**
	.376	1.000				
75 FAMSCOM	.867	.415	.871	.779	.494	.829
	.620	.613	.742	.544	.652	.873
	.891	.709	.651	.543	.927	.523
	.552	.597	.294	.498	.370	.482
	.691	.591	.318	.659	.674	.797
	.475	.898	.920	.408	.317	.239
	.276	.841	.427	.996	.971	.473
	.382	.496	.232	.186	.785	.651
	.906	.539	.707	.585	.324	.936
	.291	.456	.557	.378	.399	.329
	.330	.954	.719	.446	.854	.901
	.891	.449	.619	.333	.510	.960
	.679	.166	1.000			
76 FAMSRP	.324	.027**	.153	.549	.531	.280
	.161	1.000	.819	.977	.315	.017**
	.114	.098*	.106	.120	.268	.872
	.155	.020**	.485	.401	.227	.680

	.227	.109	.624	.030**	.806	.619
	.215	.019**	.836	.947	.777	.981
	.763	.491	.209	.850	.006***	.417
	.521	.725	.855	.310	.494	.097*
	.463	.011**	.631	.392	.287	.912
	.680	.641	.992	.395	.289	.923
	.802	.717	.186	.821	.326	.877
	.512	.482	.316	.896	.974	.815
	.146	.219	.598	1.000		
77 FAMSTA	.687	.903	.377	.089*	.824	.760
	.359	.168	.860	.831	.695	.590
	.309	.297	.351	.842	.387	.685
	.480	.847	.505	.847	.408	.590
	.346	.602	.845	.866	.826	.238
	.696	.821	.679	.455	.265	.137
	.153	.365	.785	.790	.813	.485
	.707	.273	.244	.483	.308	.882
	.505	.737	.934	.881	.517	.238
	.841	.543	.714	.891	.159	.527
	.320	.190	.063*	.709	.371	.944
	.467	.985	.505	.585	.192	.596
	.906	.996	.509	.836	1.000	

Note. 2-tailed p-values, * $p < .10$, ** $p < .05$, *** $p < .01$.